DISIBEINT ELECTRONIC SL

User's manual

Digital control relay SHG

DISIBEINT ELECTRONIC S.L, has been present in the field of the manufacture of components for the industrial automation for more than 35 years, and maintains in constant evolution their wide range of products structured in five families:

· Sensors, magnetic switches and transducers
· Level relays for liquids and solids
·Timers
· Control, surveillance and logic relays
· Digital control relay

Our permanent preoccupation is to give a suitable answer to the problems that appear in the automation of the different industrial processes, providing the most suitable material for each application.

GUARANTEE

The products provided by DISIBEINT has a guarantee period of two years, against all defect due to the materials or to the manufacture of the equipment. It does not cover the defects caused during the transport or by a bad application, neither the elements subject to wearing down, nor the direct or indirect consequences caused in the installation by the inadequate use of the equipment.

Rev.03.01 · 02/05/2019

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MENUS AND SCREENS

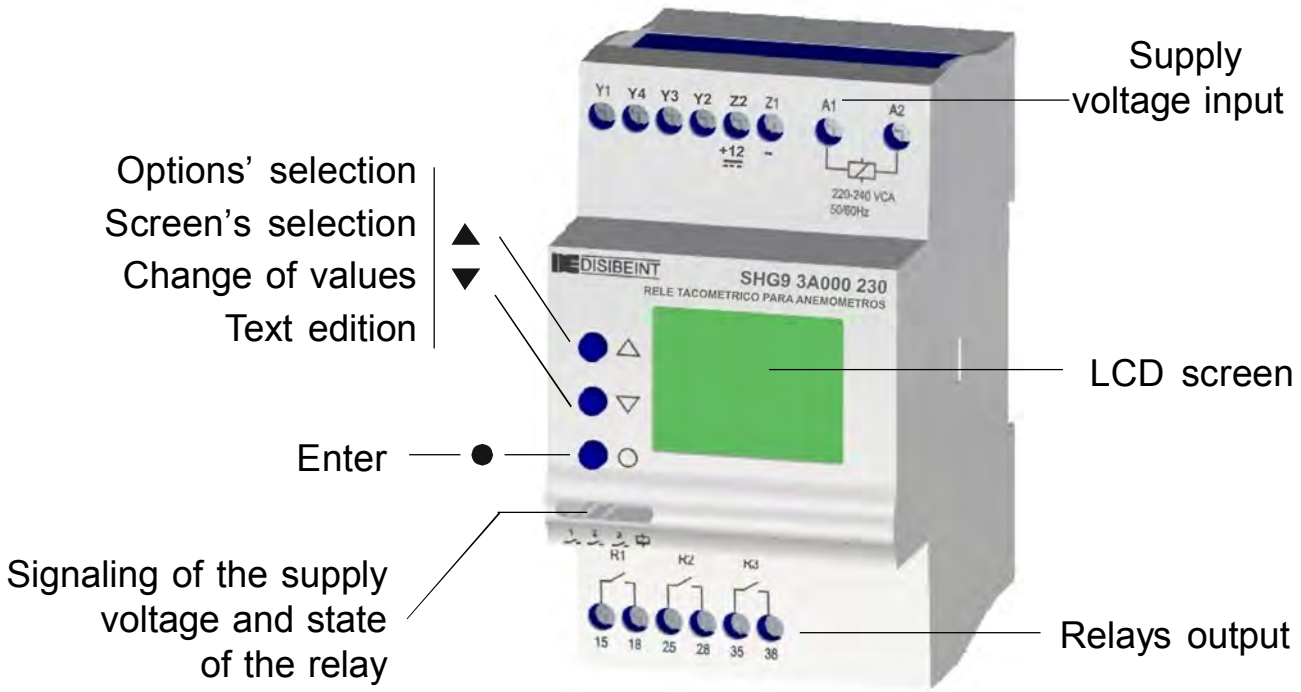
DESCRIPTION OF THE EQUIPMENT

The SHG model is a tachometric digital control relay.

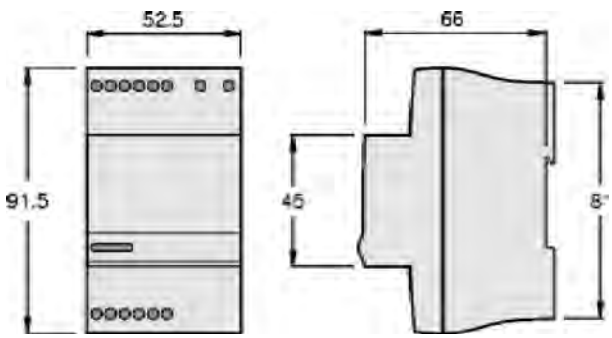
It controls rotation speed maximum and/or minimum.

The actions deriving control the various parameters may be associated with three relays, a 4-20 mA current loop or to a serial RS232 or RS485. To each of the three relays available can be assigned triggering one or more parameters.

PARTS OF THE EQUIPMENT



Dimensions



TECHNICAL DATA (1/2)

Function	Tachometric relay special for anemometers. Control and visualization of wind speed. Gust control. Common applications: awnings control, ornamental fountains, etc.
Operating mode	User configurable. Each of the relays assigned its own operating mode.
Wind speed control	

Model	Maximum output	Range		
		m/s	Km/h	mph
SVR 40	100 Hz	0,9..40,00	3,2..144,0	2,00..89,5
SVR 50	210 Hz	0,56..55,56	2..200,0	1,2..124,3

Other models, consult.

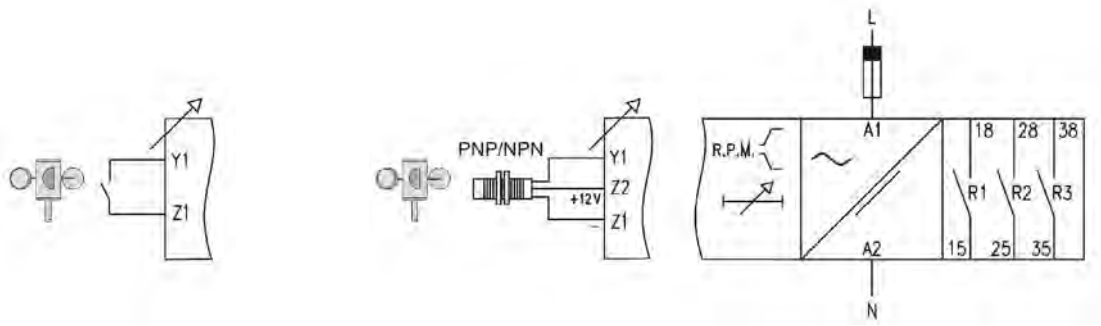
· The equipment not processed pulses with a duration of less than 1/8 of the full cycle.
· Operability for max. and/or min. rotation speed. In each case, detection is set and the replacement.

Timing	· Associable to the detection and/or replacement of any relay. · Adjustable from 0.01 s..999.9 h · Repeatability ± 30 ppm
Resolution	

m/s	Km/h	mph
0,01	0,1	0,1

Precision	1%
Detection time	3 flanks of input signal plus 5 ms of relay reaction.
input signal types	· Contact potential free: Y1 / Z1 · PNP/NPN sensor: Y1 / Z1(-) / Z2(+12VCC). Maximum 10 mA
Visualization of reading value	The value of the read magnitude is displayed by the status display: · WIND SPEED The following measurement units could be choosen: - m/s: meters per second - kmh: kilometers per hour - mph: miles per hour
Relay output	From 1 to 3 independent relays, 1 investor NO. It supplied 3 relays with the standard model.
Precision 4-20 mA	1% aditional to read value. This type of output is optional.
PC communication	It is possible to establish different communication with a personal computer (see last page): - Through telefonic connector included in the standard device and the programming interface CPBZ. - Through a RS232 connection (optional). - Through a RS485 connection and the SBAZ converter (optional).

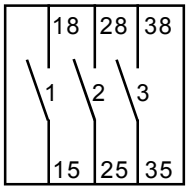
Connection



SHG

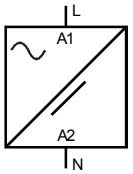
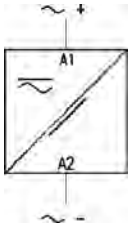
TECHNICAL DATA (2/2)

Output relays



Resistive load	AC	6 A / 240 V
	DC	6 A / 24 V
Inductive load	AC	3 A / 240 V
	DC	3 A / 24 V
Mechanical life		> 10^6 oper.
Mech. switching rate		18.000 oper. / hour
Elect. life at full load		360 oper. / hour
Contact material		AgSnO Alloy
Operating voltage		240 VDC (85 ºC)
Volt. between contacts		1000 VDC
Volt. coil/contact		4000 VDC
Isolation resistance		> 100 MΩ (500 VDC)
Indication		1 red led per relay

Supply voltage

	SHG		
			
Power supply	[024] .. [400]	[903]	[904]
Galvanic isolation	4000 V	2500 V	
Frequency	50/60 Hz	-	
Op. margins	+10% -15%	15-70 V	60-240 V
Consumption	2,5 VA	3,5 W	3,1 W
Power on time	75 ms	<525 ms*	<135 ms*
Reset	>1 net cycle and/or -30% of the nominal voltage	>70 ms* and/or -30% of the nominal voltage	
Indication	Green led		

*In the worst case

Constructives and ambientals dats

Overvoltage category	III (EN61010)
Rated impulse voltage	4 kV
Pollution degree	2 (EN61010)
Protection	IP 20
Approximate weight	280 g
Storage temperature	-30..+80ºC
Operating temperature	-20..+50ºC
Humidity	< 95% HR
Housing	Cycoloy - Light grey
Socket	Lexan - Transparent
Leds cover	Technyl - Dark blue
Button, terminal block, clip	Brass
Pins of the terminal block	0,8 Nm

Designed and manufactured under EEC normative.
Directives referred:
Electromagnetic compatibility: EMC 2004/108/EEC.
Low voltage: LVD 2006/95/EEC.
Hazardous substances: 2011/65/EEC
Plastics: UL 91 V0

CE

CE CONFORMITY DECLARATION
QUALITY CERTIFICATE

The company

DISIBEINT ELECTRONIC S.L.
Segle XX 91
E08032 Barcelona - Spain
CIF. B - 60893849

Declares under its sole responsability that the following products:

- Float Switches with generic references INCR, INMR, INME, INMF
- Level sensors and your accessories, with generic references NS, NR, NCP, NCV, NP, SC, CNM, CNP, CNPR, CNV, SVR, IBT, BPCB, BPCBA, CBBP
- Level Magnetic Switches with generic reference IMN
- Level Magnetic Transducers with generic references TMN, TMR
- Electronic relays embraced under the generic denomination of the series P*nnn*, D*nnn*, S*nnn*, *being 'nnn'* any combination of letters and/or numbers that make up a specific reference

identified with the brand DISIBEINT, have been manufactured according to the instructions of our procedure manual and are in conformity with:

Directive of Electromagnetic Compatibility
EMC 2014/30/UE from 26/02/2014
- Emission (UNE-EN 61000 6-4/2007/A1:2011)
- Immunity (UNE-EN 61000 6-2/2006)

Low Voltage Directive
LVD 2014/35/UE from 26/02/2014
- Machinery (UNE-EN 60204 -1/2007/A1:2009)
- Measuring Electronic Devices (UNE-EN 61010-1/2011)

Directive about certain hazardous sustances
2011/65/UE from 08/06/2011
- Pb, Hg, Cd, Cr +6, PBB, PBDE

Barcelona, June 2018

EMILIO JOLIS OLIVA

CONVENTIONS USED IN THIS MANUAL

Symbols	
	It refers to the information own of the theme that is treated.
	Indicate important warnings to take into account.
	It refers to how the keys must be pressed to perform the actions indicated in the examples.
	General information about the controller or about this manual, too.

Screens	
	In the pages where is explained how to access to the different screens and menus (pages 18..44), it is shown the way to come to the resolution of every option. This way is highlighted by a dark background of the of the screens related in that option. The union of several screens by means of a dashed line, means that the option is valid for all of them.

GENERAL CONCEPTS

Loop 4-20 mA (optional): The value of the wind speed is sent by the 4-20mA loop.

See the page 28 to associate a value to the current loop.

Communication with PC (optional): It is possible to communicate the model SHG with a computer via the RS232 serial port for remote programming or to process the data it generates. For a standing-alone communication, the programming interface CBPZ is required. For a multiple communication (up to 31 devices) an RS232-RS485 conversor must be used, reference SBAZ.

Display's illumination: The display remains illuminated while its is accessed to the different screens. If a key is not pressed for longer than 30 seconds, the light turns off. In order to turn the light on, it is enough to press any key once only.

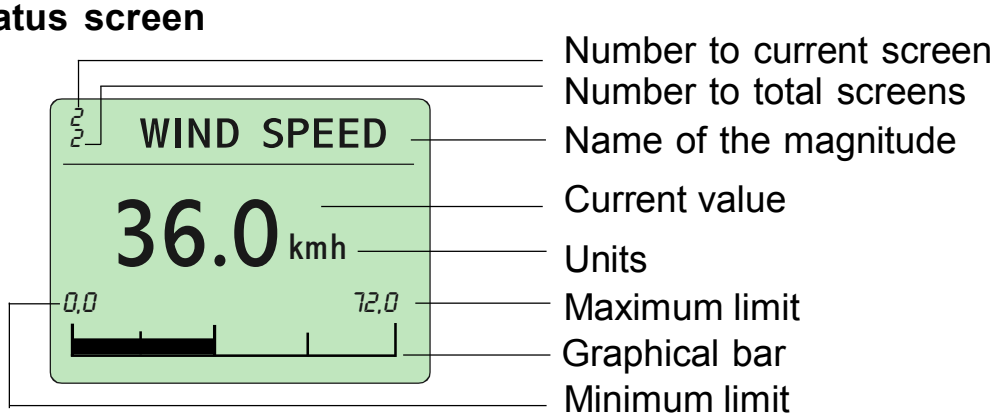
Working mode: After setting up the controller's parameters, it can be back to the normal working mode by executing the option RETURN from the set up menu. The status screens can be also visualized if any key is not pressed for longer than 3 minutes.

Interactive menus: Only those options that can be configured are accessible in menus, being the rest of the they no visible. This characteristic is interactive, this is, that it's produced automatically in function of the active options at each moment.

Change of values: The screens used to change a numerical value contain the margins between that value can be adjusted. These margins can depend on another options, so that they can visualize different values in function of another previous relations.

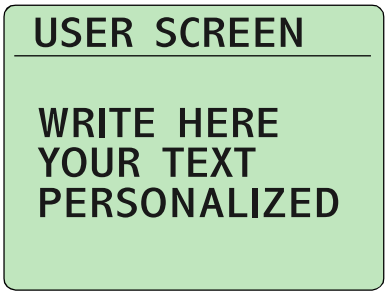
TYPES OF SCREENS (1/5)

1.1 Status screen



The status screens show the actual values of the magnitudes that the equipment controls . In the normal working mode, the equipment shows the status screen that the user has chosen like preferring magnitude of visualization. In order to move around among the different status screens of status, press▲▼.
By pressing ● from anyone, it is entered to the set up menu.
The default status screen is the one shown when the equipment is powered or when any key is pressed for longer than 3 minutes. To select it, execute the option SEE SCREEN (see page 34).

1.2 User screen



The text edited in the user screen is the one that will be shown next to the status screens when the equipment is i the normal working mode. The characters that can be used are the following:

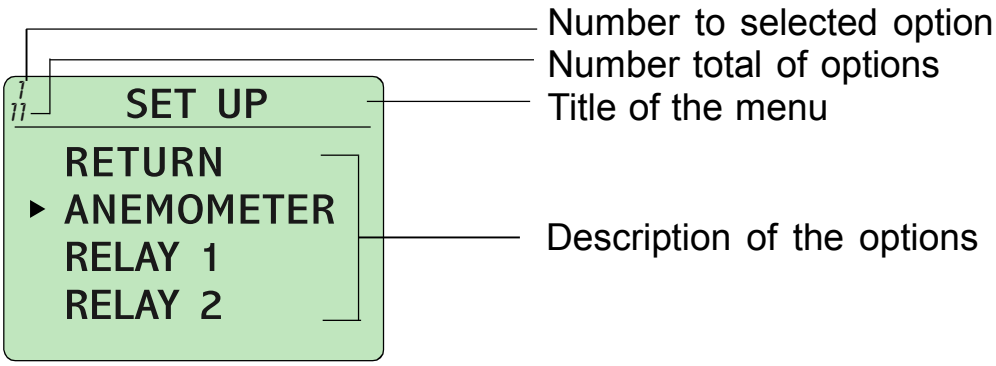
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Å Æ ß Ç Ñ Ø - / # % < = > 0 1 2 3 4 5 6 7 8 9

Pressing ▼ and ▲ the desired character is selected and becomes validated by pressing ● ,moving up to the following position of the right hand or to the line below. The repeated pulsation of ● provokes the advance of the cursor.

A validated character can not get modified, that means that is not possible to move back. In order to modify a text, is necessary to enter again into the edition screen.
In order to abandon this screen is essential to advance until the last position of the last row.

TYPES OF SCREEN (2/5)

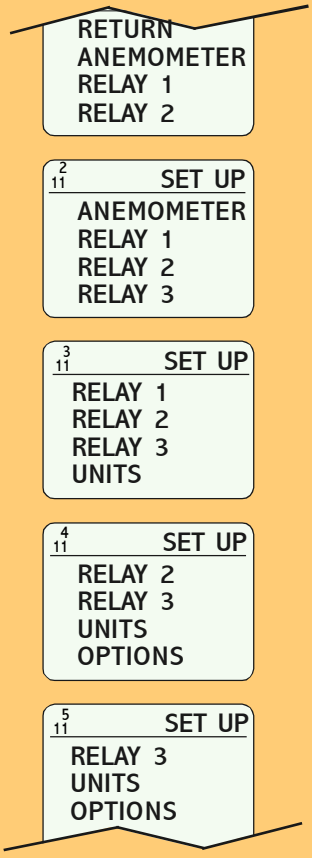
2.1 Screen of options menu



2.2 Selection of options menu

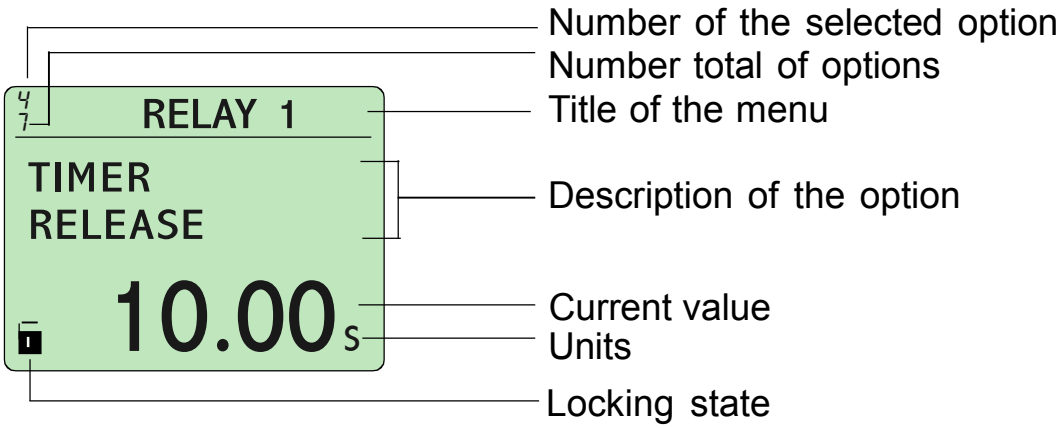
Are those in which a series of options is visualized, line by line. The selection of one option carries to a new menu. The digits placed at the top of the screen indicate, from top to down, the number of the selected option and the total number of options. The options are disposed in an endless loop, in such a way than after the last option it comes to the first one of the series. In the same way, moving back from the first option it comes to the last one of the series.

Press the keys ▲▼ until the cursor indicate the desired value and ● to validate it and jump to a new menu. In order to abandon a menu of options and to return the preceding screen, the option RETURN must selected.

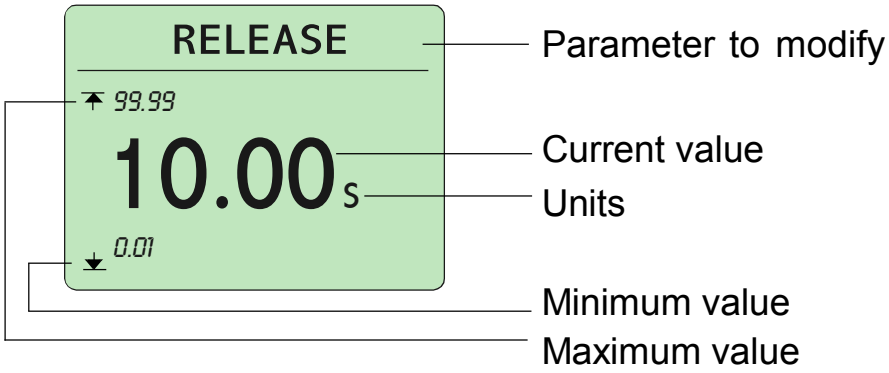


TYPES OF SCREENS (3/5)

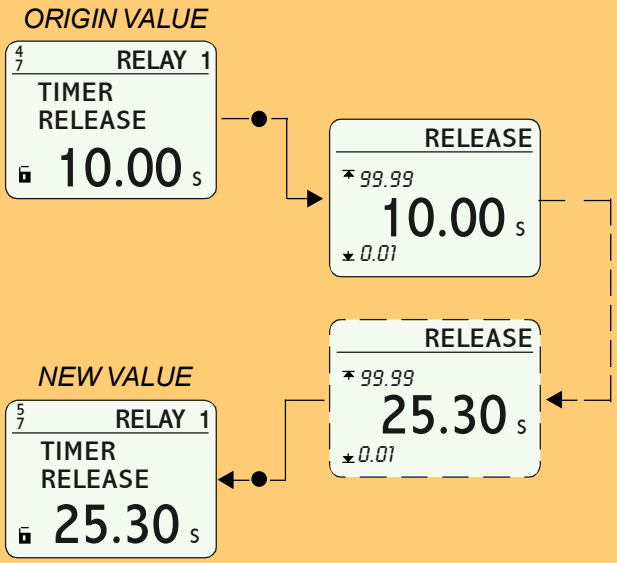
3.1 Informative screen of numerical value



3.2 Screen for changing a numerical value

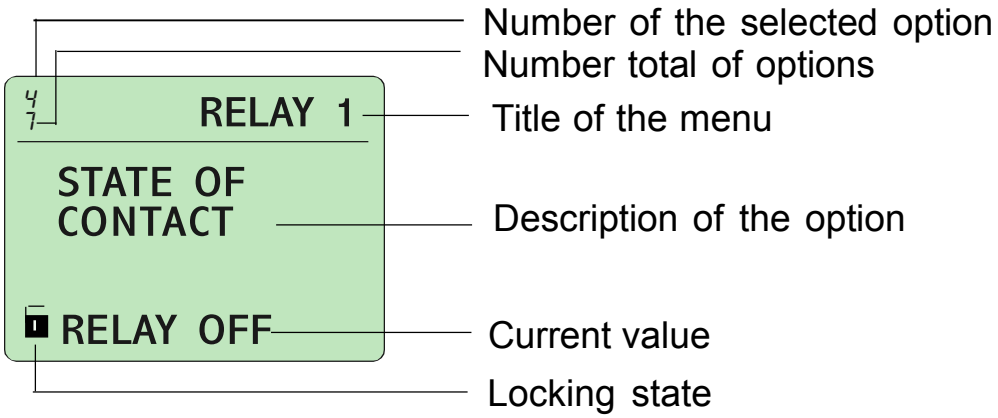


Once placed on the screen that shows the parameter we want to modify its value, press ● in order to access to the screen for changing the value. Since the modification is done digit by digit and not like a complete value, the first digit at left remains blinking. Press ▲▼ to modify the value and ● to validate it and to advance to the following digit. When the last digit becomes validated the preceding screen is visualizated again.

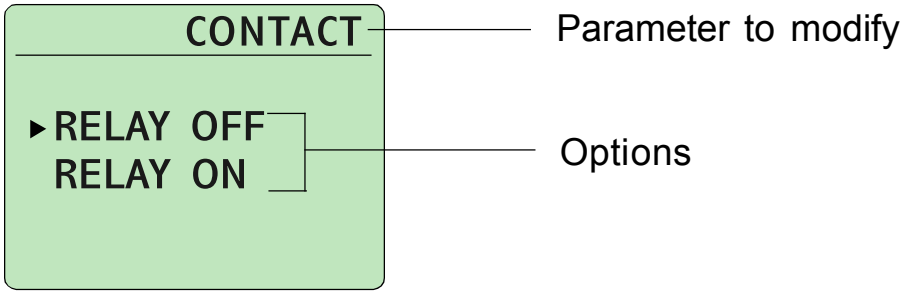


TYPES OF SCREENS (4/5)

4.1 Informative screen of alphanumeric value

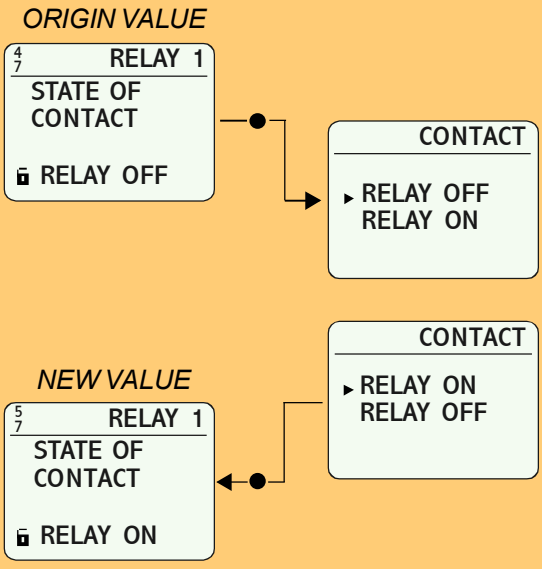


4.2 Screen for changing an alphanumerical value



Once placed on the screen that shows the parameter we want to modify its value, press ● in order to access to the screen for changing the value.

Press ▲▼ until the cursor indicates the desuired value and ● to validate it and return to the preceding screen.

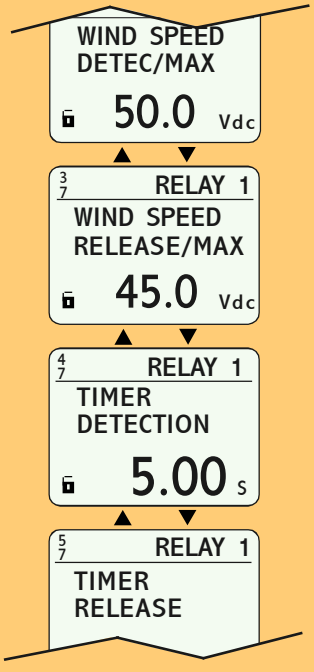


TYPES OF SCREENS (5/5)

5.1 Screens menus

Are those in which is visualized a series of screens, all them related under the same concept. The digits placed at the top of the screen indicate, from top to down, the number of the selected screen and the total number of screens. The screens are disposed in an endless loop, in such a way than after the last screen it comes to the first one of the series. In the same way, moving back from the first screen it comes to the last one of the series.

Each one of the screens usually displays the definition of a parameter and its actual value. Press the keys ▲▼ to move to a new screen and ● to modify the value visualized in it. If no-one value is visualized on the screen, pressing ● it is accessed to a new menu. In order to abandon a screens menu and return to the preceding one, the RETURN screen must be selected.



QUICK START

1 - Apply supply voltage to terminals A1 and A2. Be sure to match with the value marked on the equipment. The green LED is lit. Now it does not matter if the red LEDs for relays are or not illuminated.

2 - Set the parameters that your application needs. You can now choose between two solutions: set each parameter individually (see Advanced Programming, pg. 17) or use the "user programs" which, by way of example, contain most of the parameters already configured for some applications "type" and where you only need to modify those that do not fit your application. Please read the description of these programs to see if it suits your needs. (See pages 14..16).

3 - Verify that the relay status is desired, checking the red LEDs on the front.

4 - If correct, disconnect the power supply and connect the output relays under the terms of their application. Reapplying voltage, the team will be ready to work.

USER PROGRAMS (1/3)

The user program is ongoing in the SHG model.

In order to modify them, load the program you desire (for example, number 1) into memory by means of the sequence SET UP-OPTIONS-PROGRAM 1. Modify the parameters, values, timers, etc. and do the opportune checkings until everything work correctly.

Bear in mind that the disconnection of the supply voltage does not provoke the loss of data. For your safety, save your changes by means of the sequence SET UP-OPTIONS-SAVE PROG. (see page 31).

Remember than every time that Program 1 is loaded into memory, the default factory parameters will be restored. If the User Program is loaded (SET UP-OPTIONS-USER PROG.), you will obtain the parameters that you modified (see page 32).

It is not required to load any user program when the equipment turns on: it is kept the same configuration that was operative the last time that the equipment was turned off.

USER PROGRAMS (2/3)

PROGRAM 1: Control for maximum and minimum wind speed with an anemometer rated 100Hz-40m/s

RELAY 1: Control for maximum, 50 km/h

STATE OF CONTACT = ON	*ALARM STATE* = OFF
DEFINITION WORKING MODE = →	*WIND SPEED MAXIMUM* = OPERATIVE
WIND SPEED DETEC / MAX = 50,0 kmh	*WIND SPEED MINIMUM* = NON OPERATIVE
WIND SPEED RELEASE / MAX = 45,00 kmh	*DETECTION MODE* = DELAYED
DETECTION TIMER = 5,00 s	*TIME RANGE DETECTION* = SECONDS
RELEASE TIMER = 5,00 s	*RELEASE MODE* = DELAYED
	TIME RANGE RELEASE = SECONDS

RELAY 2: Control for maximum, 70 km/h

STATE OF CONTACT = ON	*ALARM STATE* = OFF
DEFINITION WORKING MODE = →	*WIND SPEED MAXIMUM* = OPERATIVE
WIND SPEED DETEC / MIN = 70,0 kmh	*WIND SPEED MINIMUM* = NON OPERATIVE
WIND SPEED RELEASE / MIN = 65,0 kmh	*DETECTION MODE* = DELAYED
DETECTION TIMER = 5,00 s	*TIME RANGE DETECTION* = SECONDS
RELEASE TIMER = 5,00 s	*RELEASE MODE* = DELAYED
	TIME RANGE RELEASE = SECONDS

RELAY 3: Control for minimum

STATE OF CONTACT = ON	*ALARM STATE* = OFF
DEFINITION WORKING MODE = →	*WIND SPEED MAXIMUM* = NON OPERATIVE
WIND SPEED DETEC / MAX = 10,0 kmh	*WIND SPEED MINIMUM* = OPERATIVE
WIND SPEED RELEASE / MAX = 12,0 kmh	*DETECTION MODE* = DELAYED
DETECTION TIMER = 5,00 s	*TIME RANGE DETECTION* = SECONDS
RELEASE TIMER = 5,00 s	*RELEASE MODE* = DELAYED
	TIME RANGE RELEASE = SECONDS

NOTE: Options in italics are only available according to the ones selected in DEFINITION WORKING MODE.

USER PROGRAMS (3/3)

PROGRAM 2: Control for maximum and minimum wind speed with an anemometer rated 210Hz-50m/s

RELAY 1: Control for maximum, 50 km/h

STATE OF CONTACT = ON	*ALARM STATE* = OFF
DEFINITION WORKING MODE = →	*WIND SPEED MAXIMUM* = OPERATIVE
WIND SPEED DETEC / MAX = 50,0 kmh	*WIND SPEED MINIMUM* = NON OPERATIVE
WIND SPEED RELEASE / MAX = 45,00 kmh	*DETECTION MODE* = DELAYED
DETECTION TIMER = 5,00 s	*TIME RANGE DETECTION* = SECONDS
RELEASE TIMER = 5,00 s	*RELEASE MODE* = DELAYED
	TIME RANGE RELEASE = SECONDS

RELAY 2: Control for maximum, 70 km/h

STATE OF CONTACT = ON	*ALARM STATE* = OFF
DEFINITION WORKING MODE = →	*WIND SPEED MAXIMUM* = OPERATIVE
WIND SPEED DETEC / MAX = 70,0 kmh	*WIND SPEED MINIMUM* = NON OPERATIVE
WIND SPEED RELEASE / MAX = 65,0 kmh	*DETECTION MODE* = DELAYED
DETECTION TIMER = 5,00 s	*TIME RANGE DETECTION* = SECONDS
RELEASE TIMER = 5,00 s	*RELEASE MODE* = DELAYED
	TIME RANGE RELEASE = SECONDS

RELAY 3: Control for minimum

STATE OF CONTACT = ON	*ALARM STATE* = OFF
DEFINITION WORKING MODE = →	*WIND SPEED MAXIMUM* = NON OPERATIVE
WIND SPEED DETEC / MAX = 10,0 kmh	*WIND SPEED MINIMUM* = OPERATIVE
WIND SPEED RELEASE / MAX = 12,0 kmh	*DETECTION MODE* = DELAYED
DETECTION TIMER = 5,00 s	*TIME RANGE DETECTION* = SECONDS
RELEASE TIMER = 5,00 s	*RELEASE MODE* = DELAYED
	TIME RANGE RELEASE = SECONDS

NOTE: Options in italics are only available according to the ones selected in DEFINITION WORKING MODE.

ADVANCED PROGRAMMING

If you wish to program by your own the model SHG, it is no necessary to load any user program. Configure the setting from the screens that appear when you connect the device the first time. Follow the advices below to begin to program:

1 - Determine wath action will make every relay (Ex.: Control the maximum wind speed for the relay 1; minimum wind speed for the relay 2,...) keep in mind that several relays could control the same magnitude. (Ex.: To set two different set-points for a minimum wind speed, set the minimum wind speed for both relays, 1 and 2, and set distinct values)

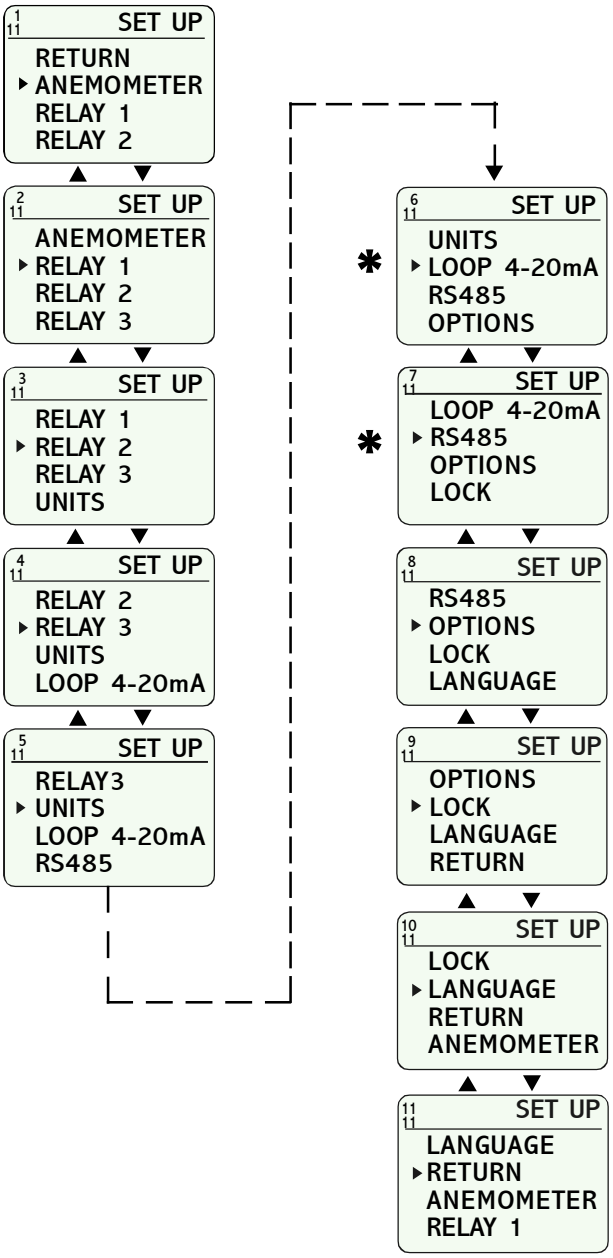
2 - Determine what actions must be delayed (Ex.: 3 seconds when a maximum wind speed is detected, 5 seconds when minimun wind speed is detected,…).

3 - Begin programming. Remember that certain options will be available according to which are settled in other previous options. Enter at the SET UP menu and select RELAY1. Look fot the DEFINITION WORKING MODE screen and select it. Set and reset the optionsof this menu according to your previous plan. If you wish to add timing to the detection or to the release operation, set the screens MODE DETECTION or MODE RELEASE respectively to DELAYED. In the following screens, the time units can be set. Select the RETURN screen to return to the previous menu and program the values of the options activated fot the RELAY 1.

4 - Proceed in the same way for the rest of the relays, in case that you would want to use them..

5 - Consult the following pages to know the rest of the programming possibilities offered by the models SHG.

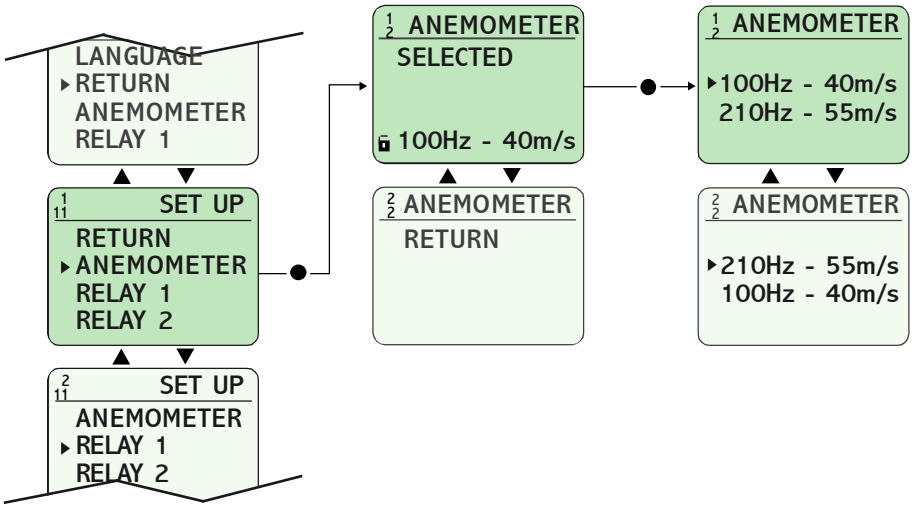
SET UP MENU



Is the main menu from which is possible to set up all the parameters involved in the equipment. It is accessed from the status screens when pressing the button “Enter”. It is also possible to arrive by chosing the succesives options RETURN included in whichever of the rest of menus or screens.

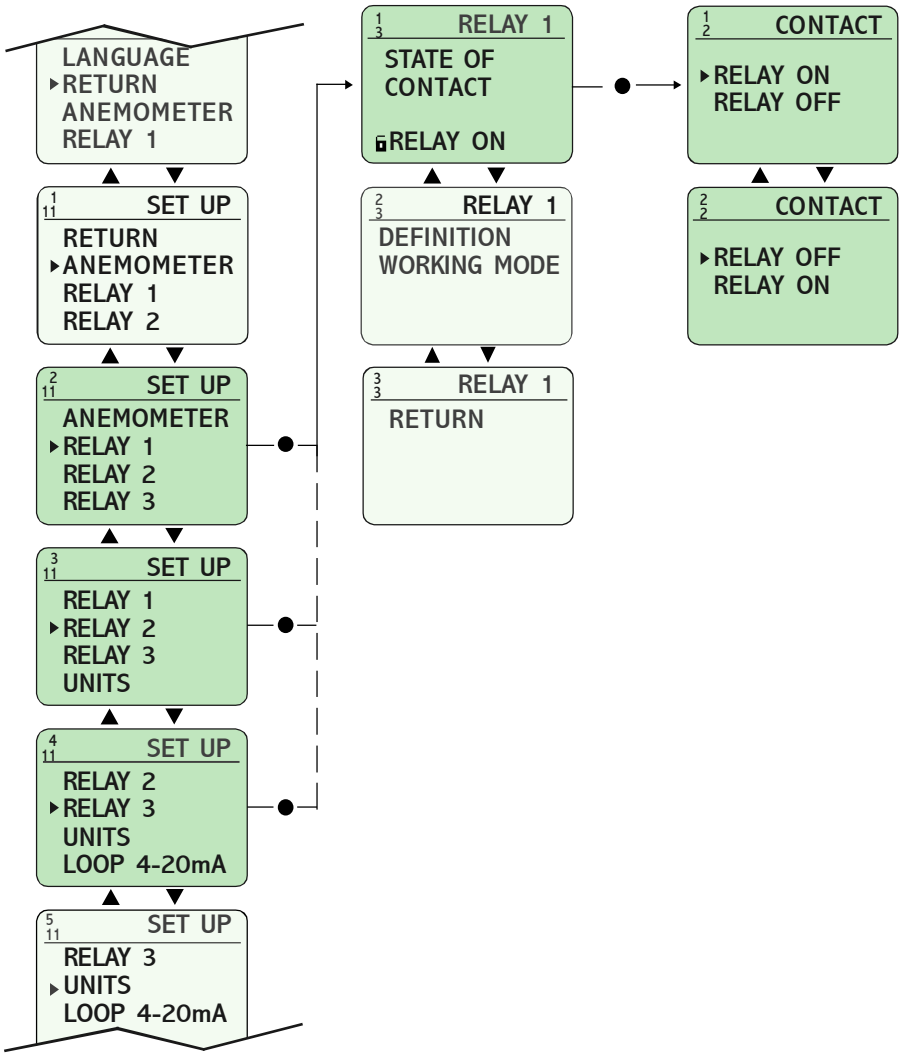
* These options depend on the selected equipment, it means that they cannot be available in the one you have.

ANEMOMETER



This option selects the anemometer used (see page 3 for more details).

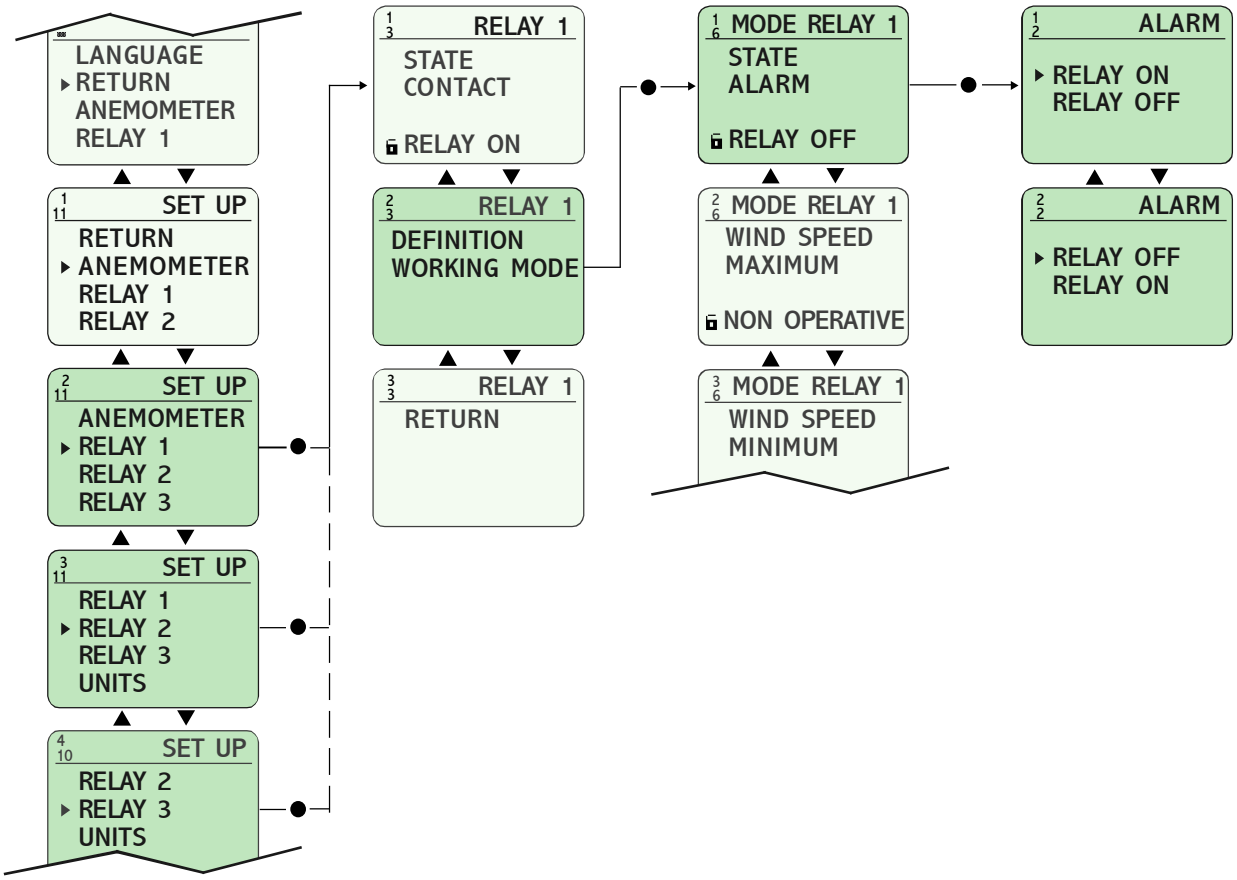
STATE OF THE RELAY CONTACTS



Existing information on this page and in the subsequent configuration referred RELAY 1, RELAY extend to RELAY 2 and 3, being necessary to set the parameters of each relay independently.

The state of the relay (OFF/ON) indicates the position of the contacts of the relay when the controller is turned on. The state of the contact of the relay must be set up according to the required operation you need to perform.

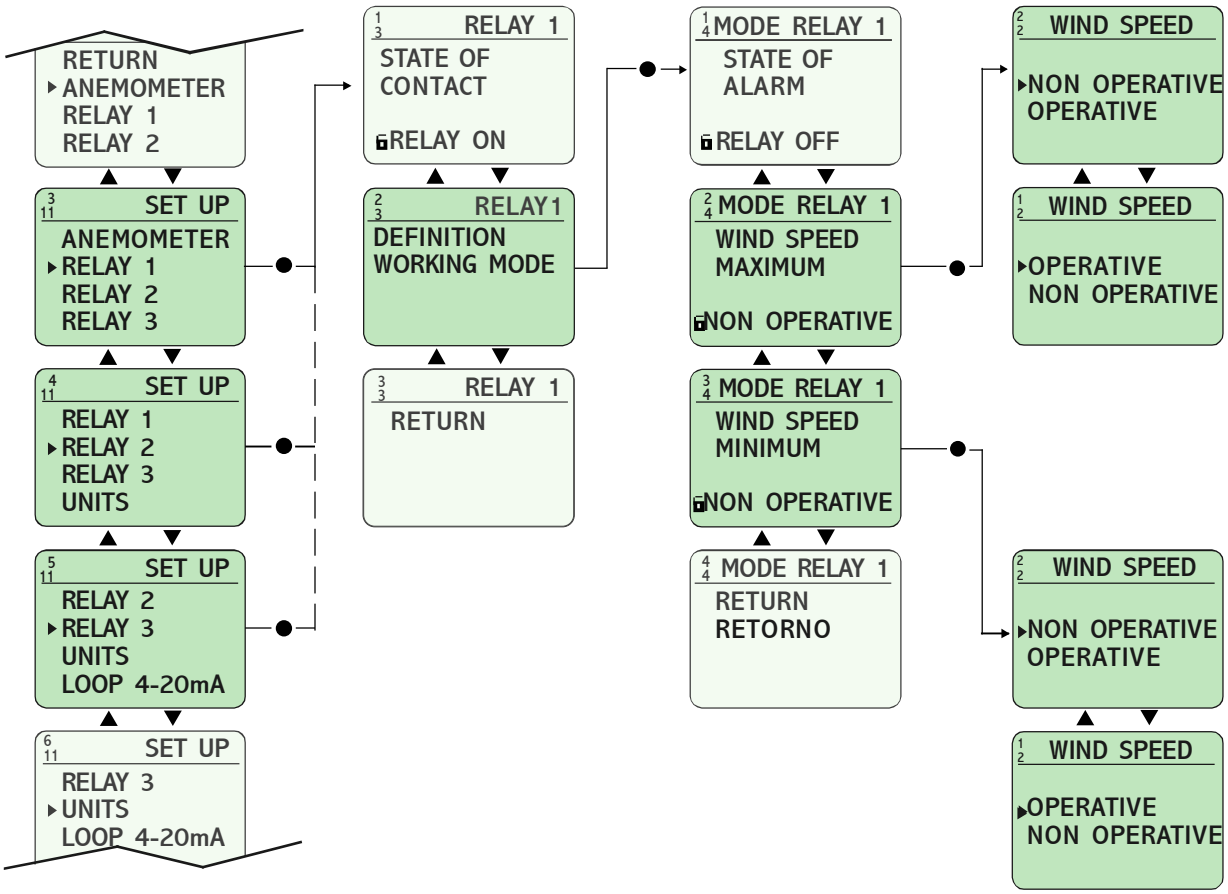
STATE OF CONTACT IN ALARM



The “alarm mode” is that which is produced when an internal error or memory error occurs.

Because the device would remain with a wrong information, some undesired situation could happen like, for example, the alarm for overvoltage remains unactived although the voltage be over the adjusted value. By means of this option can be set up the state of the contacts of the relay when this situation is produced.

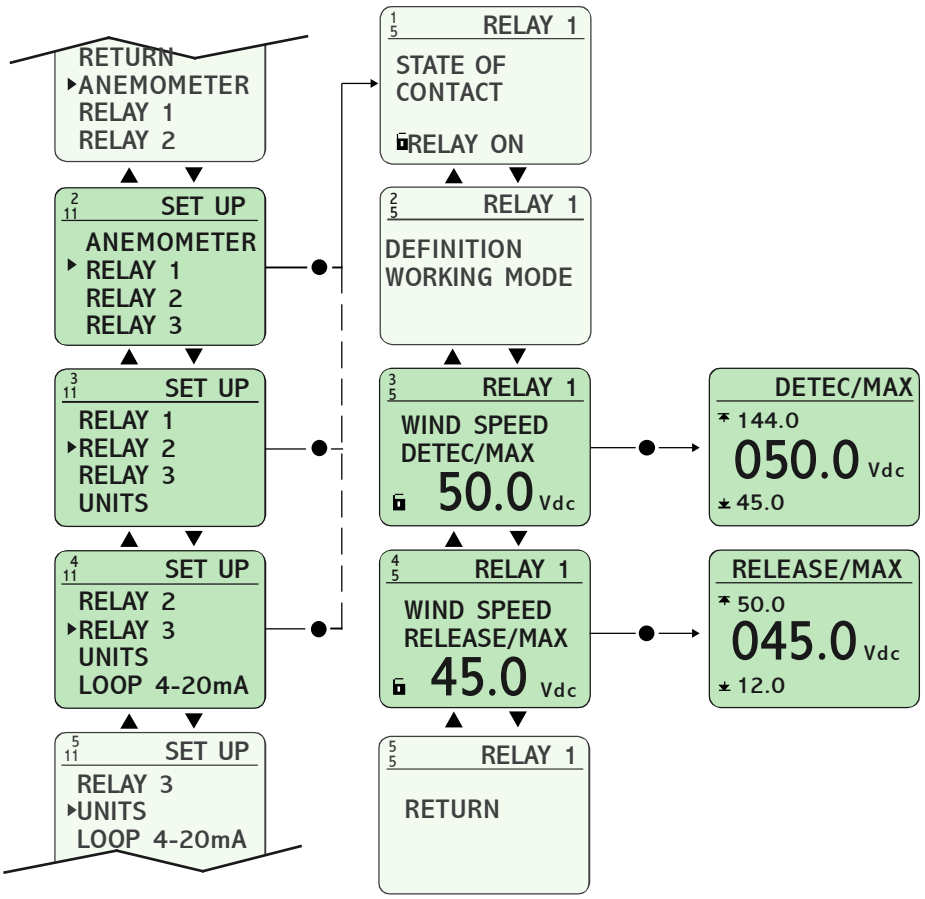
MAXIMUM AND/OR MINIMUM WIND SPEED(1/2)



Activation

To make the relay operates when the controller detects a determinate maximum and/or minimum wind speed, set this option as OPERATIVE.

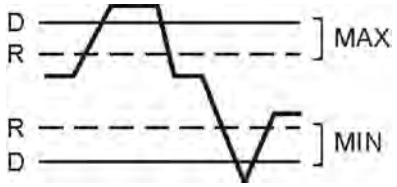
MAXIMUM AND/OR MINIMUM WIND SPEED(2/2)



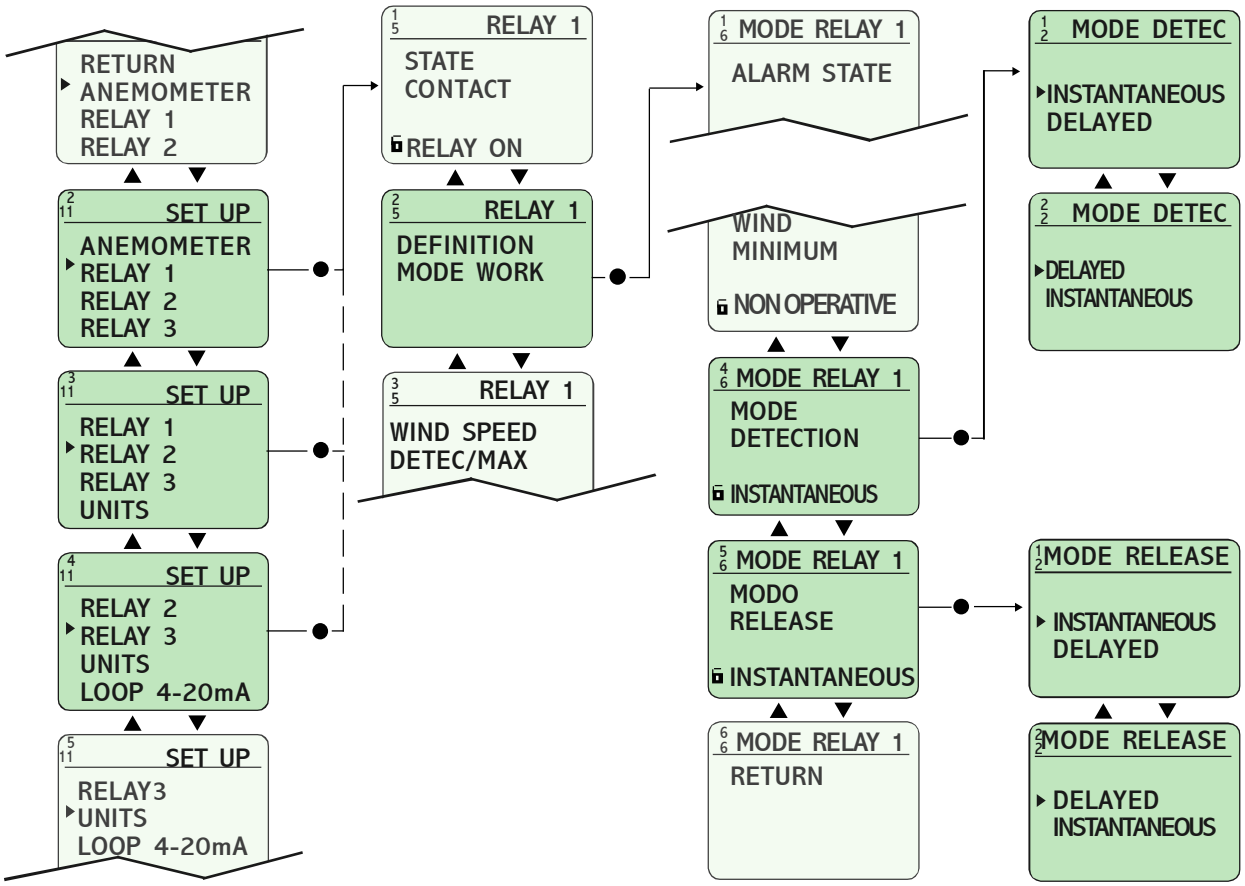
Previous condition	WIND SPEED MAXIMUM = **[** OPERATIVE **]** WIND SPEED MINIMUM = **[** OPERATIVE **]**

Adjustement

It allows to set the value for the detection and/or the release of the max. and/or min. wind speed.
When setting the working values for Maximum, the release value must be lower than the detection value.



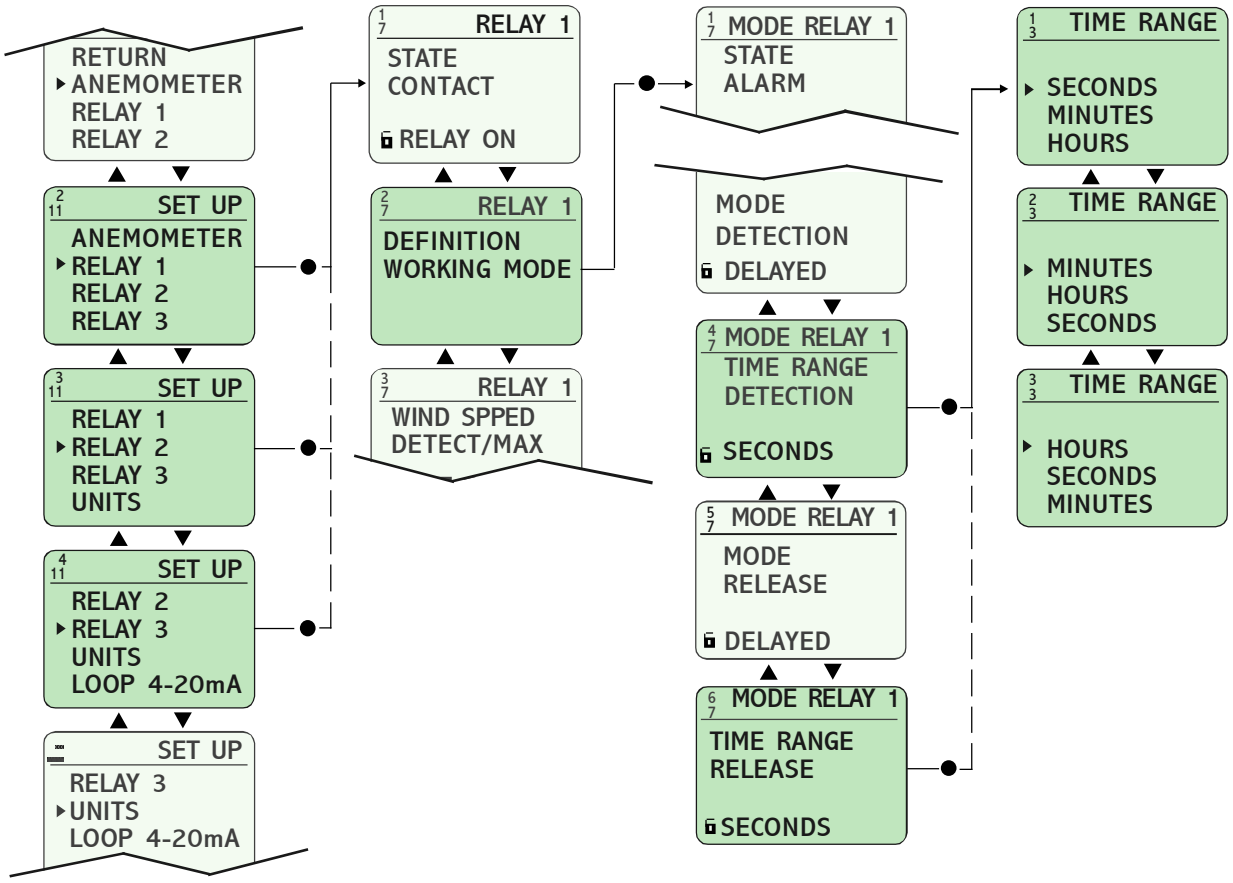
DELAY ON DETECTION AND/OR ON RELEASE (1/3)



Activation

To incorporate a time delay to the detection and/or to the release the options MODE DETEC and/or MODE RELEASE must be set as DELAYED. The relay will not operate until the signal will be kept (at the detection) and/or lost (at the release) for a time longer than the adjusted one.

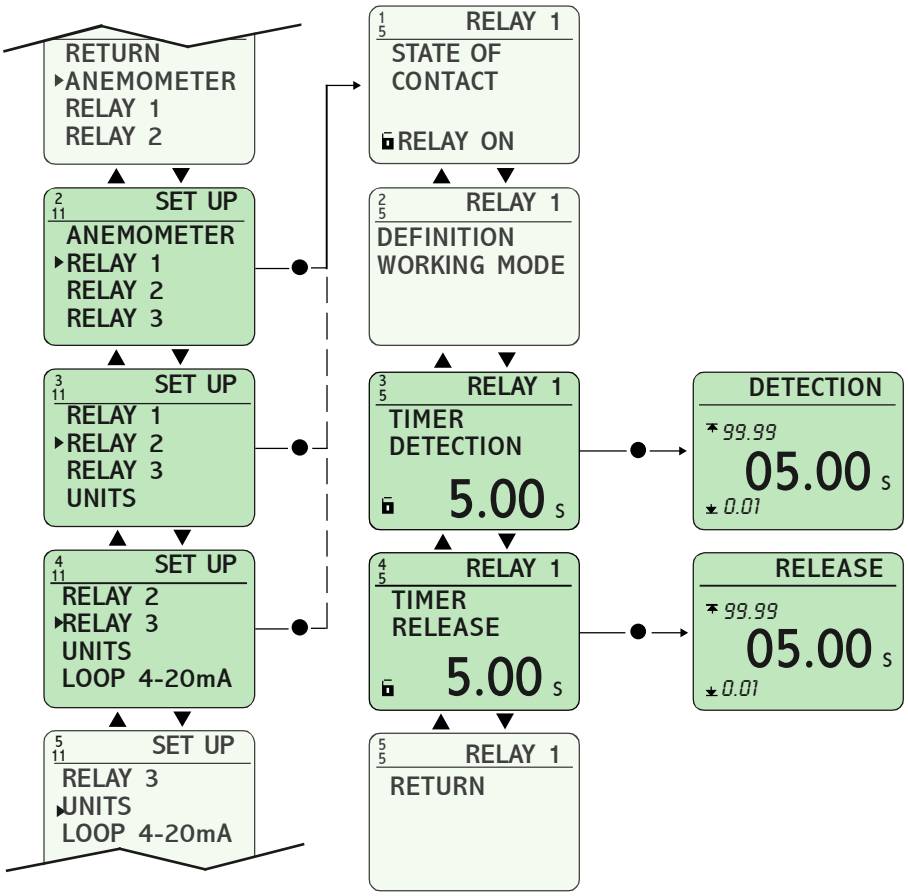
DELAY ON DETECTION AND/OR ON RELEASE (2/3)



Ranges

The time ranges for the detection and/or for the release can be set as SECONDS, MINUTES or HOURS.

DELAY ON DETECTION AND/OR ON RELEASE (3/3)



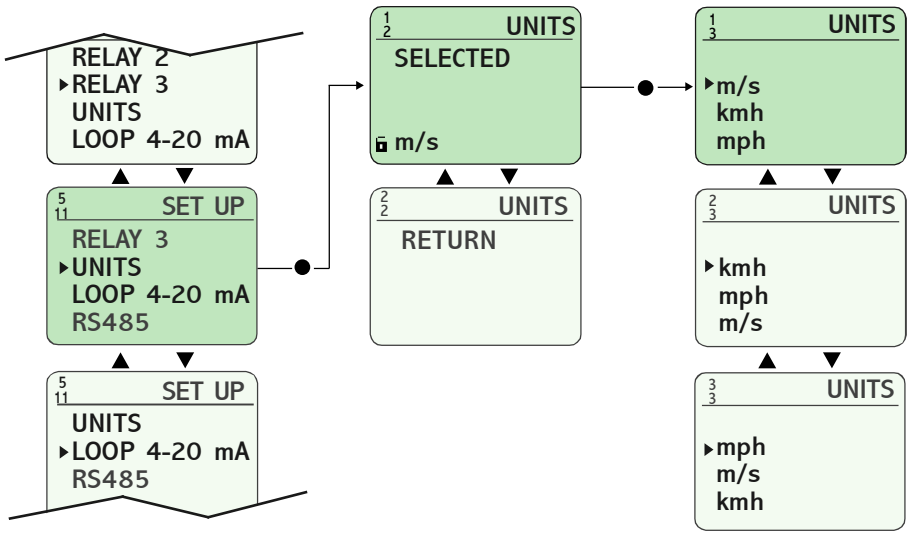
Time

It allows to set the exact time for the detection and/or the release.

The time margins depend on the previously selected range, and can be adjusted between the following values:

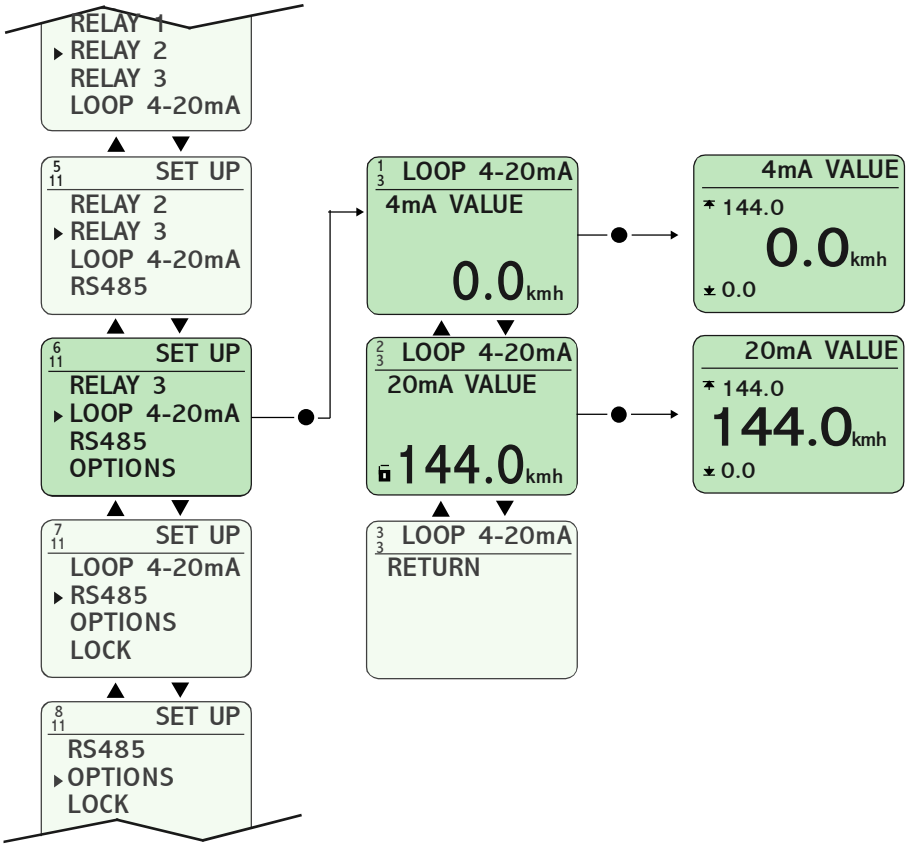
0.01..99.99 SECONDS
0.01..99.99 MINUTES
0.1..999.9 HOURS

UNITS



This option allows to select the measurement units used to watch the magnitude. It can be choosen between: m/s, kmh o mph (see page 3 for more details).

LOOP 4-20 mA

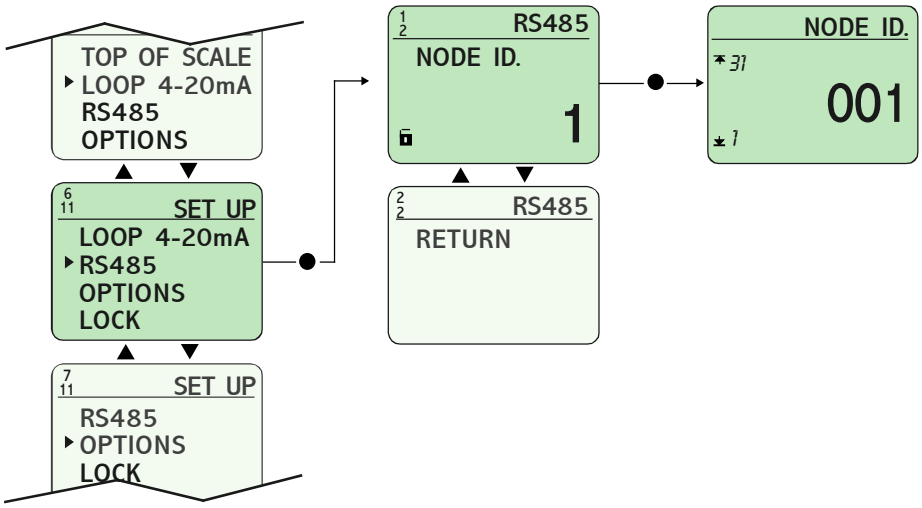


Adjustment

This option allows to define the operating margins for the 4-20 mA loop current. It is required to set by separate a countervalue for 4 mA and for 20 mA. It is possible to invert the loop sense by setting to 4 mA a countervalue higher than to 20 mA.

This feature is unique to models with this method of communication.
Consult the connection at page 46.

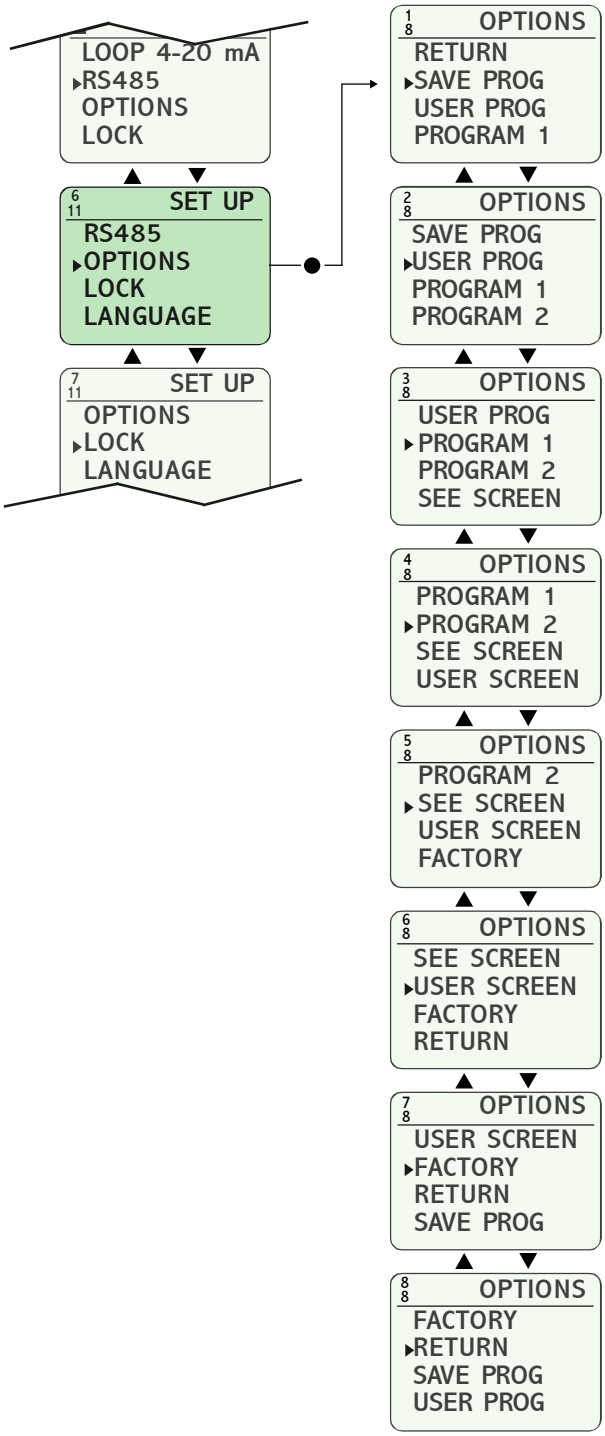
RS485



Is possible to communicate the controller SHG with a computer via the serial port RS232 for the remote programming or to process the generated data.
With the option RS485 can be connected up to 31 equipments in the same net, being equal or different among them. A node number, exclusive identification number, must be assigned to each equipment.
Is essential to employ the converter RS232-RS485 (reference SBAZ).
For extended information relative to programming with a computer, consult the manual deCom.

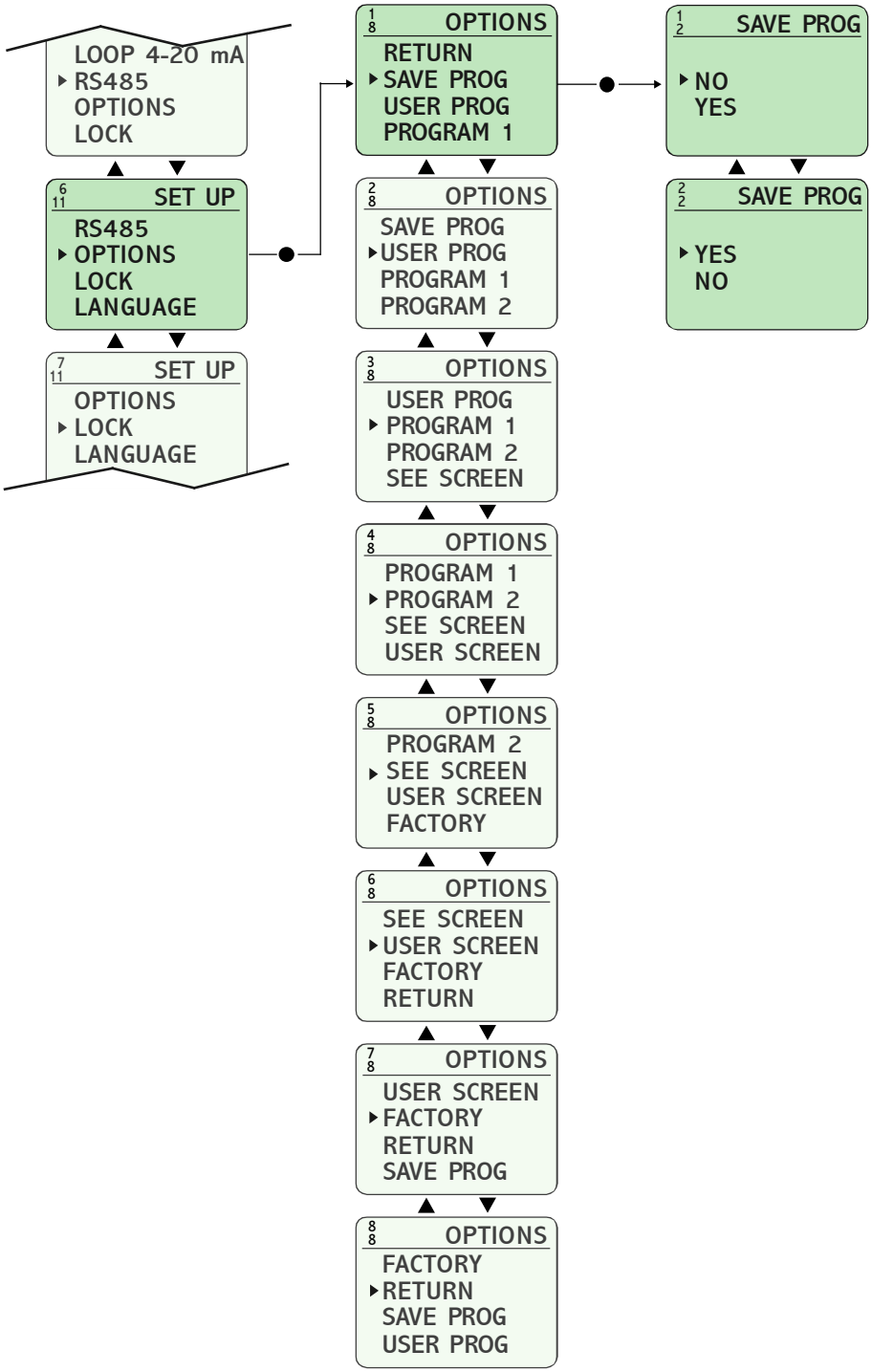
This feature is unique to models with this method of communication.
Consult the connection at page 47.

OPTIONS MENU



With the options menu are set those parameters which are not basic for the operative of the equipment.

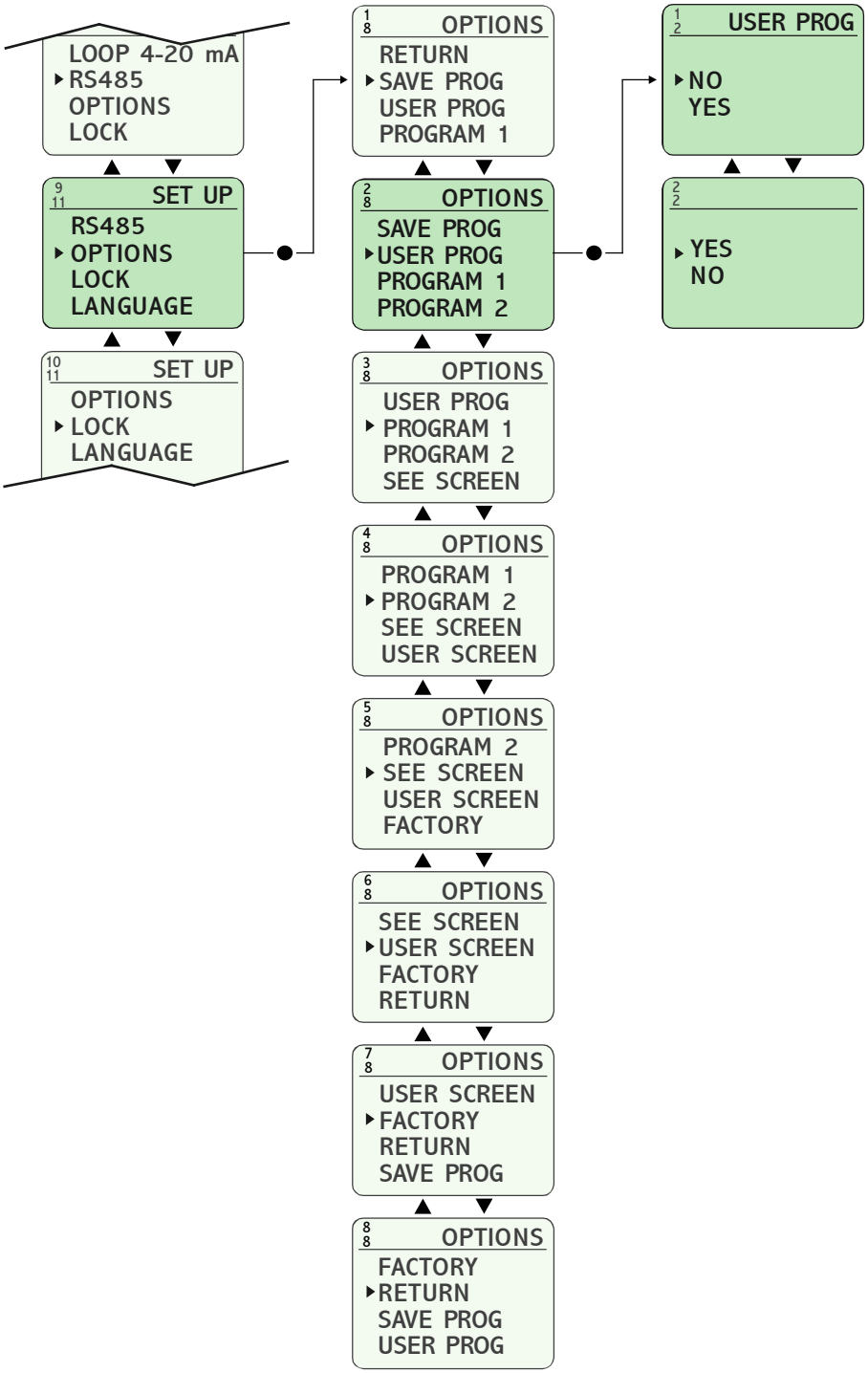
SAVE PROGRAM



It stores the changes done in the different parameters and options. Each time that SAVE PROGRAM is executed, the values stored in the user program are overwritten.

You will find more information related to the user program in the pages 14..16.

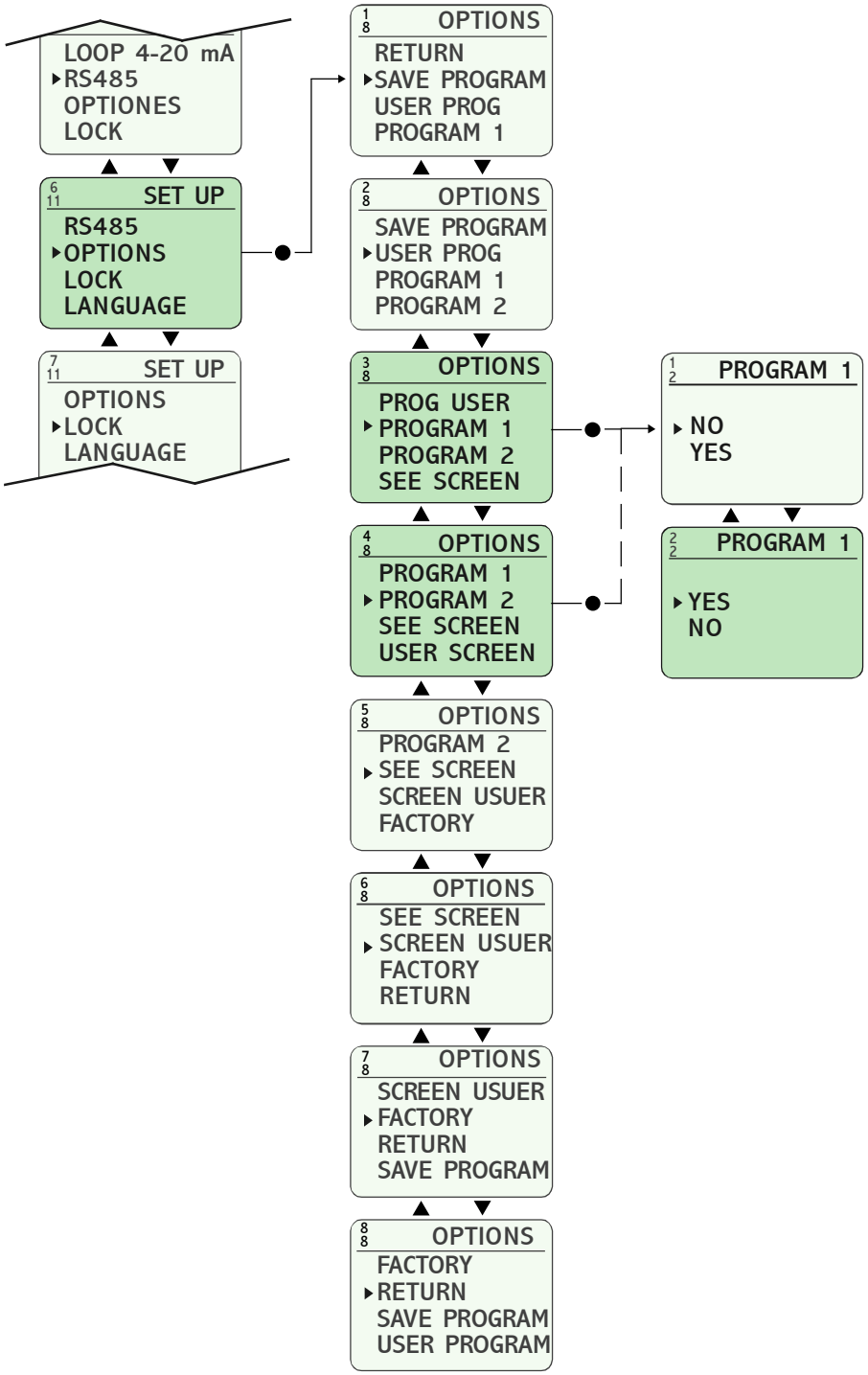
USER PROGRAMS



It loads into memory the program that was stored with the option SAVE PROGRAM, becoming the working program. Each time that this option is executed, the values stored in the memory are overwritten.

You will find more information related to the user program in the pages 14..16.

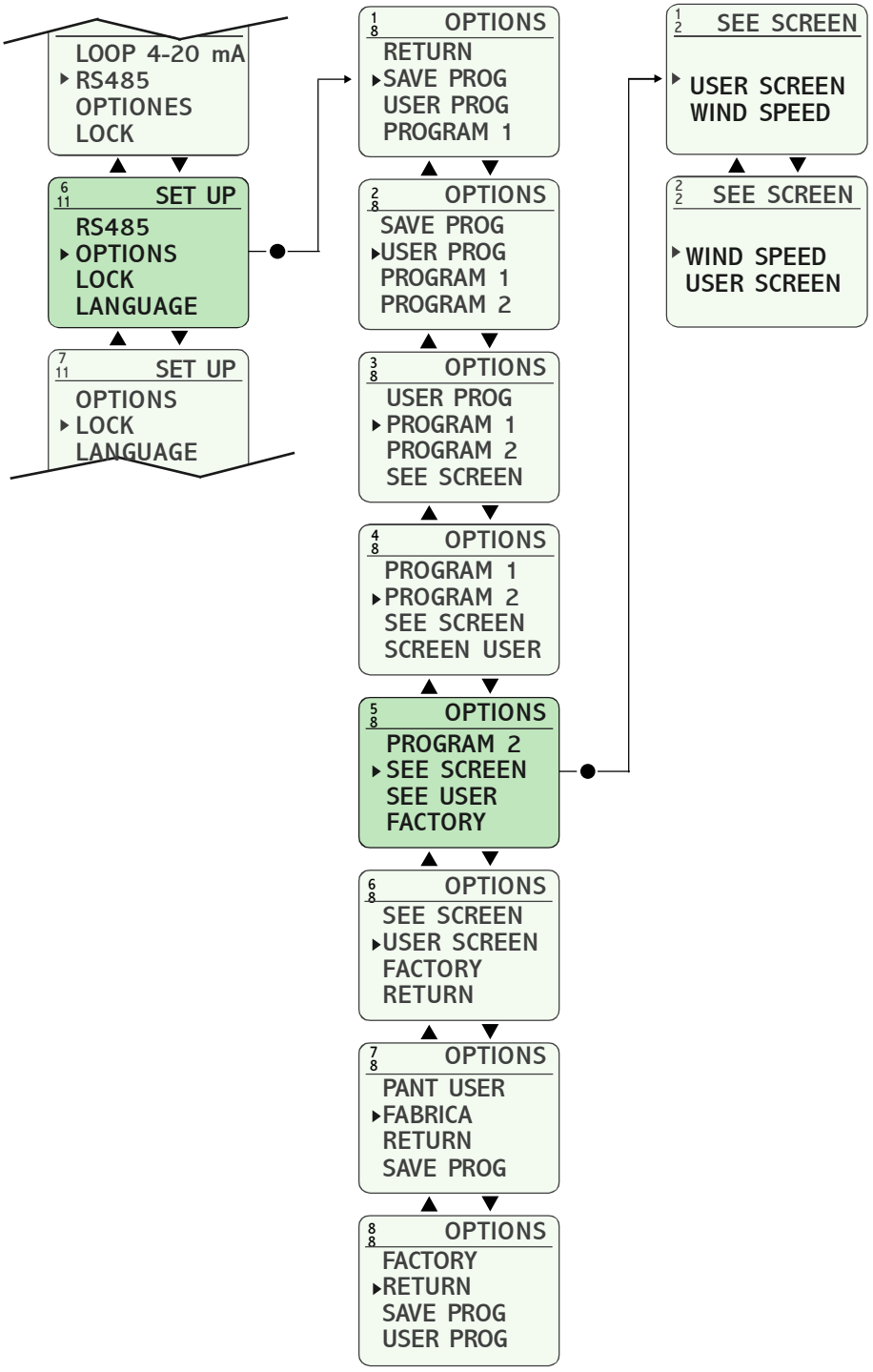
PROGRAM 1 AND 2



It loads into memory the selected program, becoming the working program. Each time that this option is executed, the values stored in the memory are overwritten.

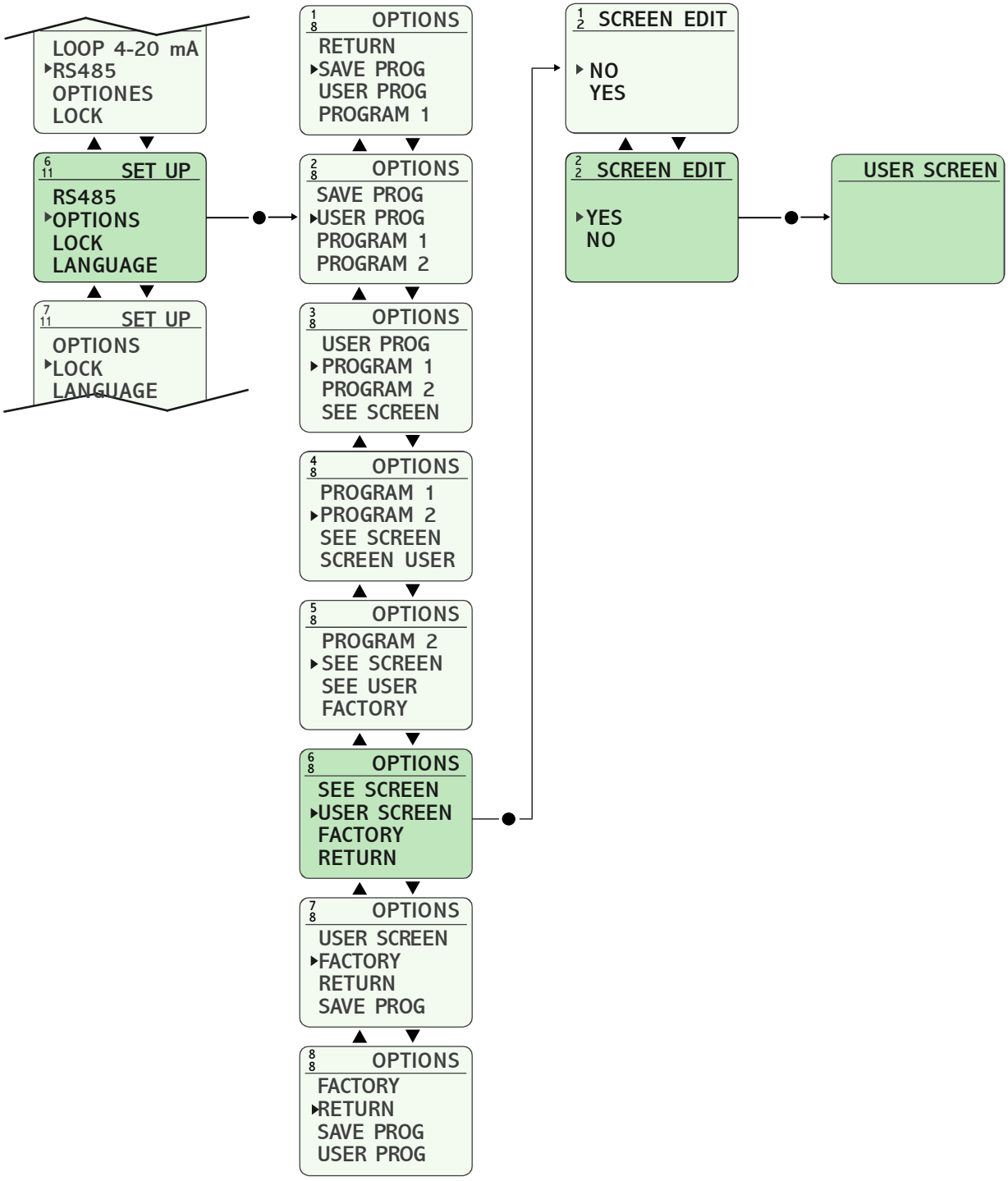
You will find more information related to the user program in the pages 14..16.

SEE SCREEN



This option allows to set which will be the default screen in the status screens menus (normal working mode).

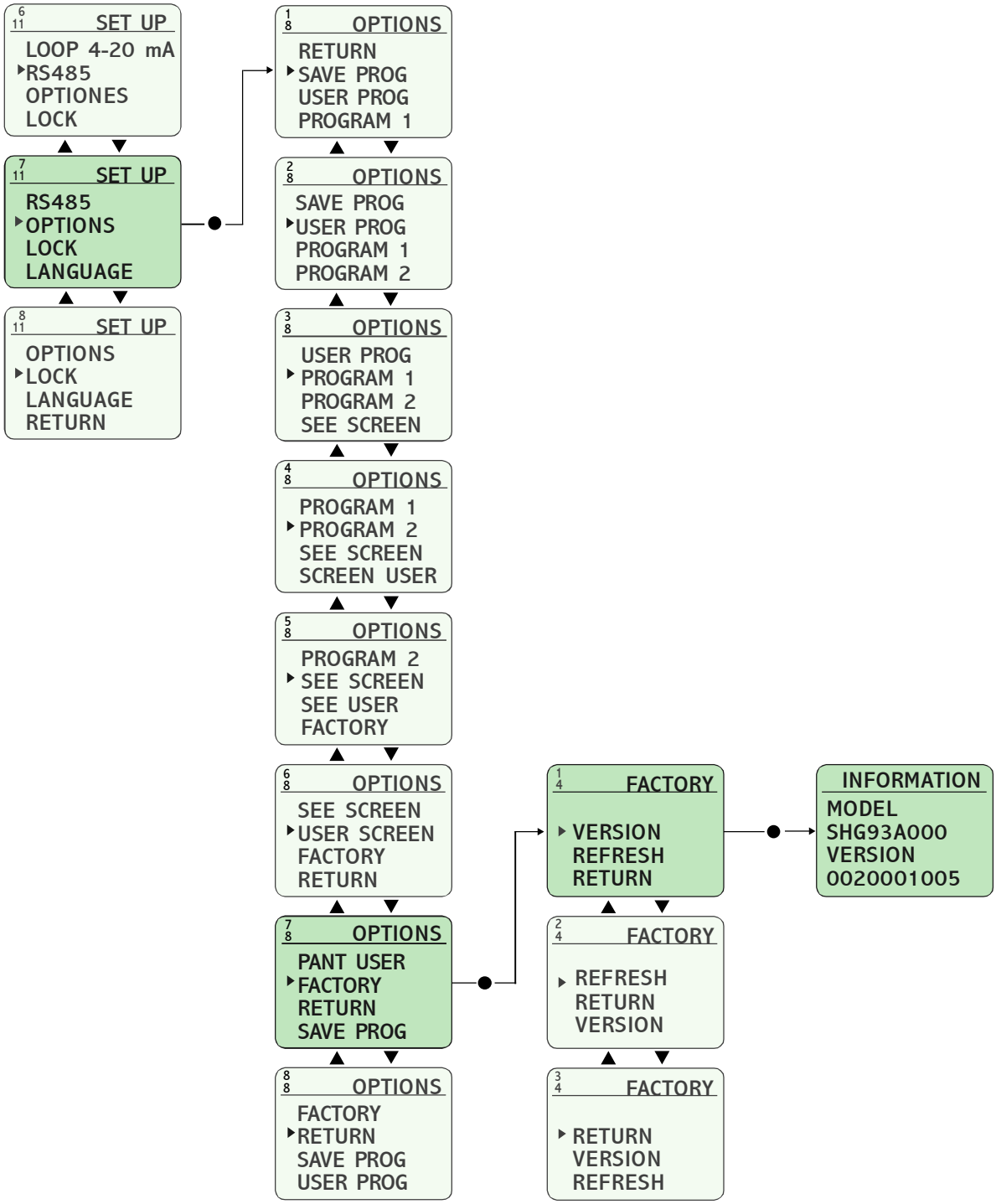
EDIT USER SCREEN



On this screen you can edit any text identifying the device.

You can use 4 lines of 13 characters each. For characters that can be used and how to edit them, see the section "1.2 USER SCREEN".
(See page 8).

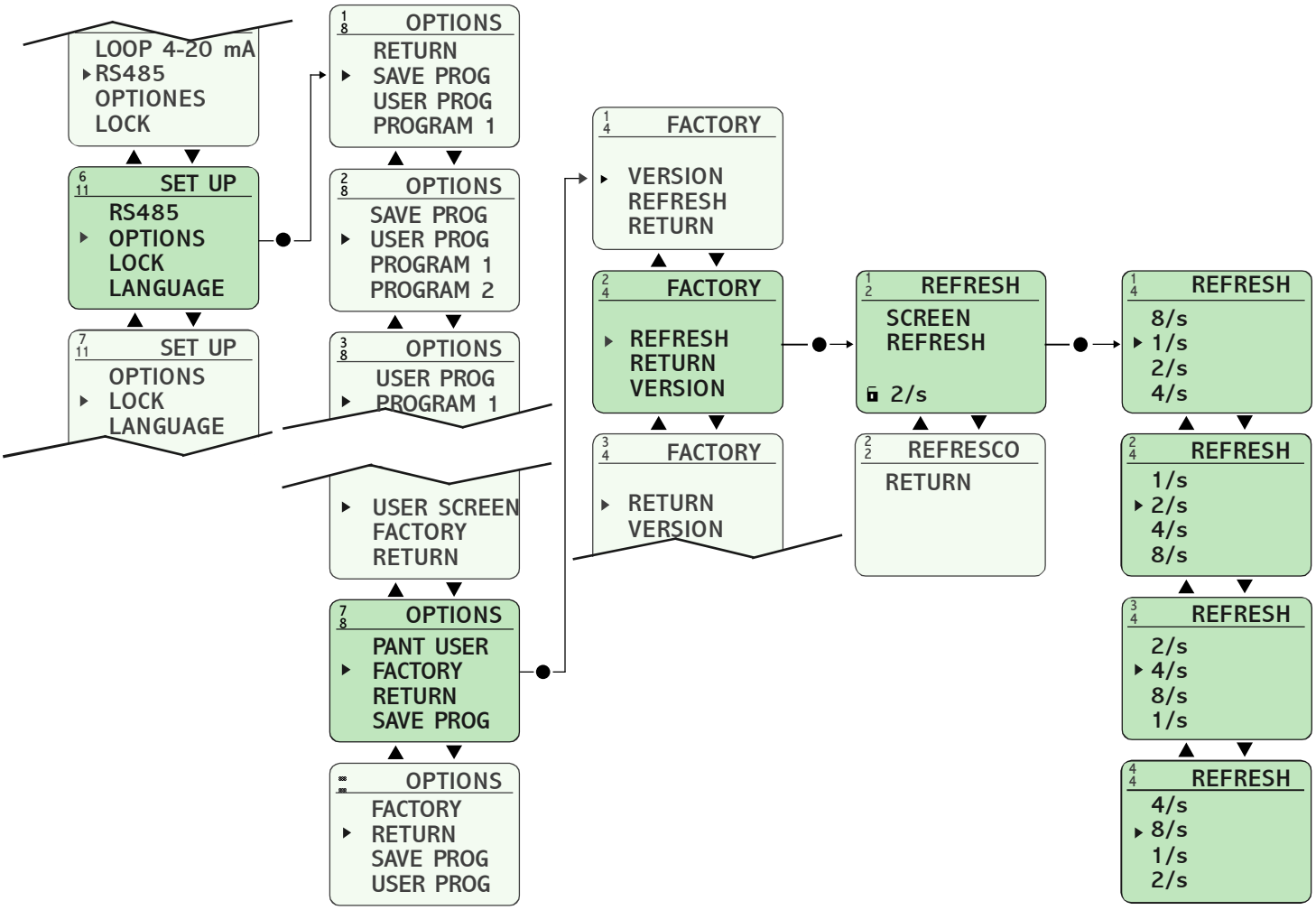
INFORMATION OF MODEL AND VERSION



Access to this option if you want to know the exact reference of the model and the version of the built-in software.

This is an informative screen. It is active for 3 seconds and returns automatically to the previous screen once the time has elapsed.

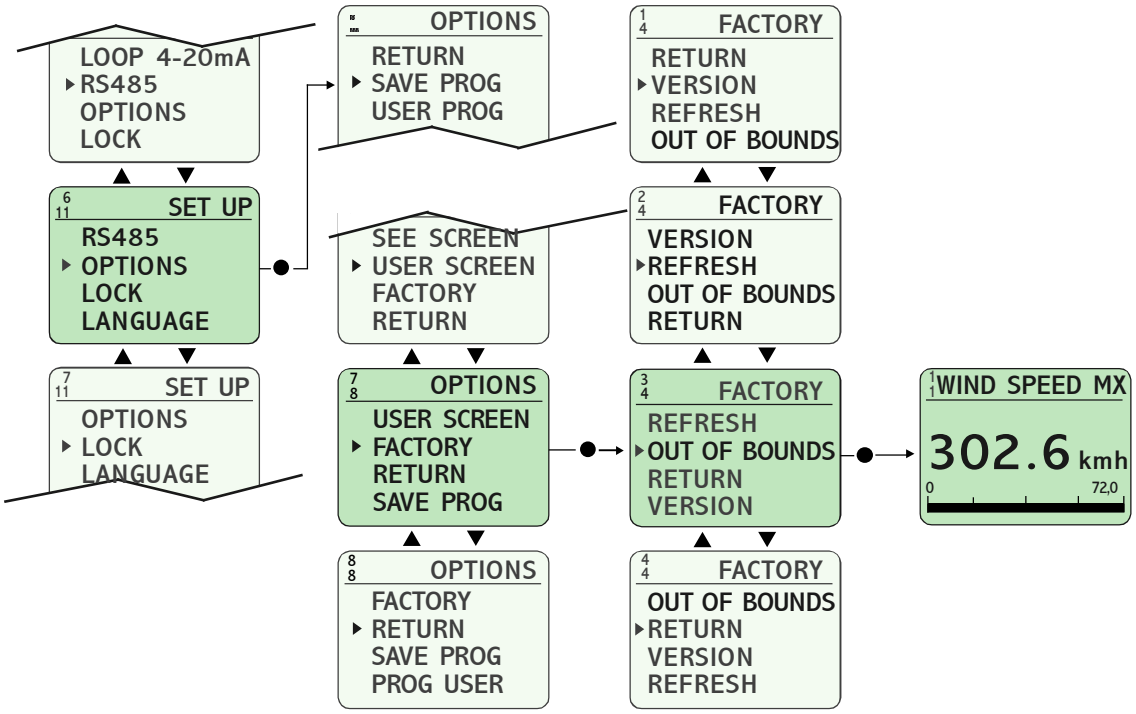
SCREEN REFRESH



It is defined as the time of regeneration of the information showed in the LCD. Only the status screens are affected for this option.

The value indicates the times that the screen is regenerated each second. So, with the value 1/s the screen is regenerated 1 time per second, and with the value 8/s it is done 8 times per second.

OUT OF BOUNDS VALUES

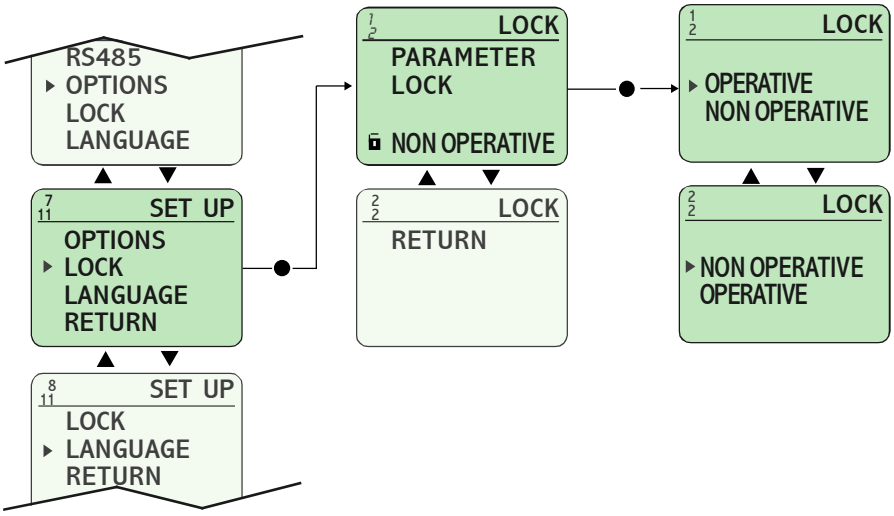


By means of this option is possible to read the highest values registered since the first time that the device was turned on. A value higher than the stored one overwrites it. The magnitudes to be controlled is the wind speed.

The stored values do not depend of the device's operation margins and they can be higher than them. If a value overtakes the displaying capacity of the controller, it will show the text 99.99.

This screen is just informative and the values can't be modified.

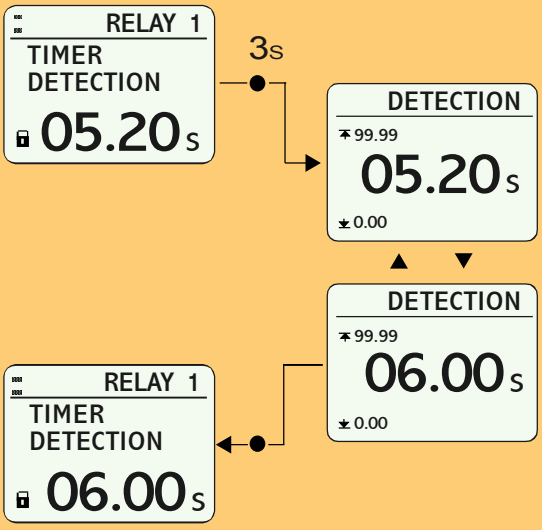
PARAMETERS LOCK



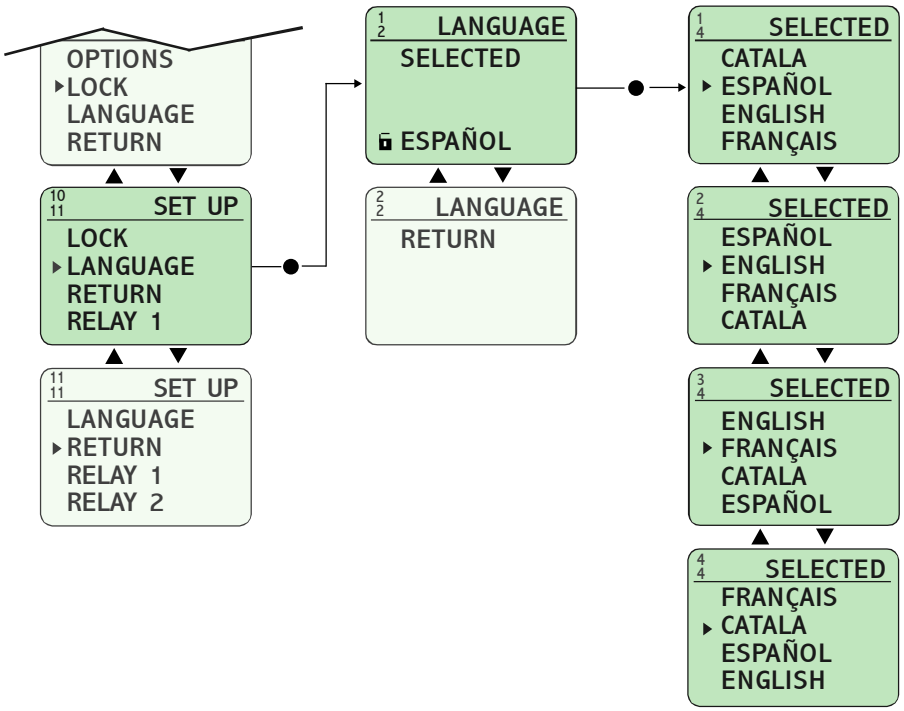
All device parameters can be locked so that it can not be changed accidentally.

The LCD status parameters indicated by the following symbols:
- Parameters locked:
- Parameters unlocked:

You can change the value of a parameter that is blocked without having to access the above sequence. To do this, once located on the screen that shows the parameter whose value has to change, hold the button for 3 seconds to access the screen for changing the value.
Once validated the change back to the screen from becoming blocked again parameter.



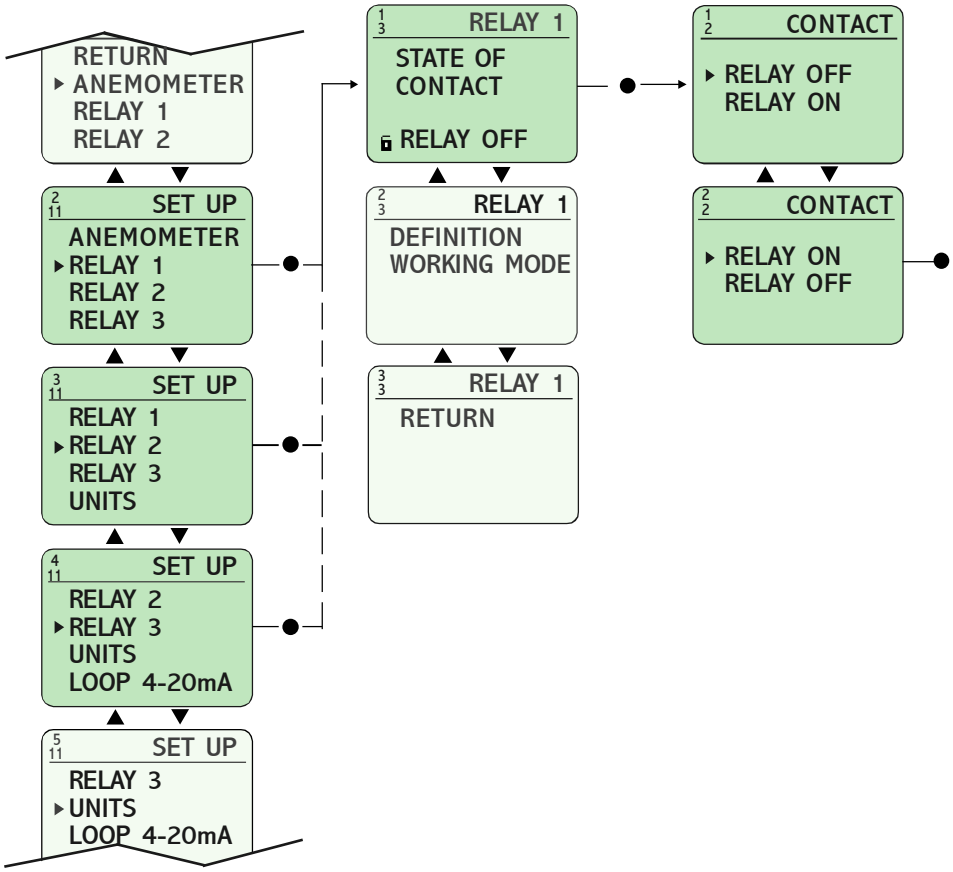
LANGUAGE



The SHG model incorporates four different languages with which to display the text on the screen. Three of them are always present in every team: English, Spanish and French, the fourth option on request.

Complementary Functions (1/4) AUXILIARY CONTACT

The relays that are not related with the detection or the release by any magnitude can be used to perform complementary functions.

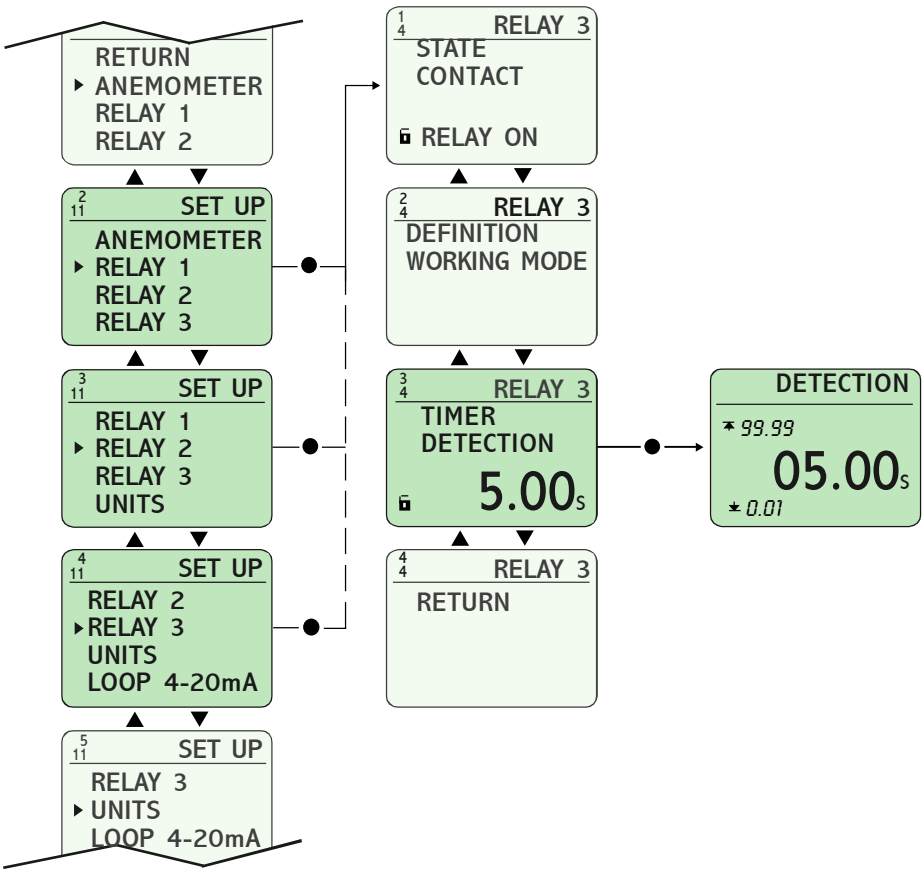


Previous conditions

STATE OF CONTACT = **[** RELAY ON **]**
WIND SPEED MAXIMUM = **[** NON OPERATIVE **]**
WIND SPEED MINIMUM = **[** NON OPERATIVE **]**
MODE DETECTION = **[** CANCELED **]**
MODE RELEASE = **[** CANCELED **]**

When the supply voltage is connected the contact of the relay operates instantaneously and will remain in this state until the supply voltage disconnected.

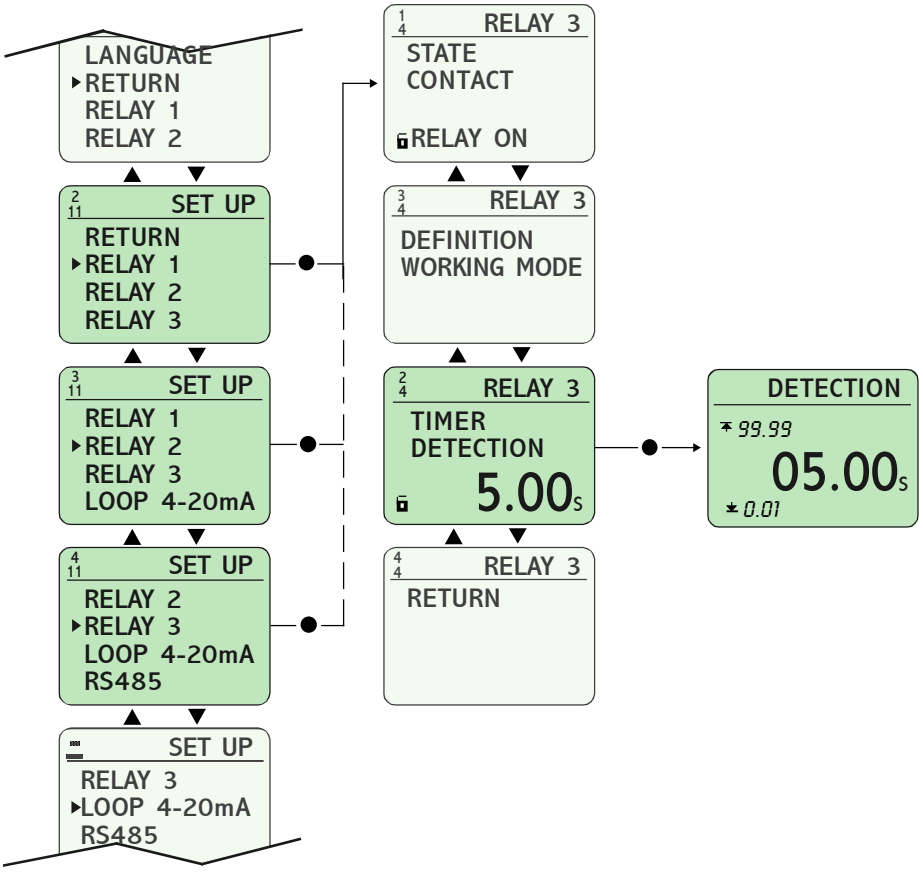
Complementary Functions (2/4) DELAY ON CONNECTION



Previous condition	STATE CONTACT = **[** RELAY OFF **]** WIND SPEED MAXIMUM = **[** NON OPERATIVE **]** WIND SPEED MINIMUM = **[** NON OPERATIVE **]** MODE DETECTION = **[** DELAYED **]** MODE RELEASE = **[** CANCELED **]**

ⓘ	When the supply voltage is connected the relay remains released and the time circuit starts up. Once the time has elapsed the relay operates. It can remain in this state for an undefined time.

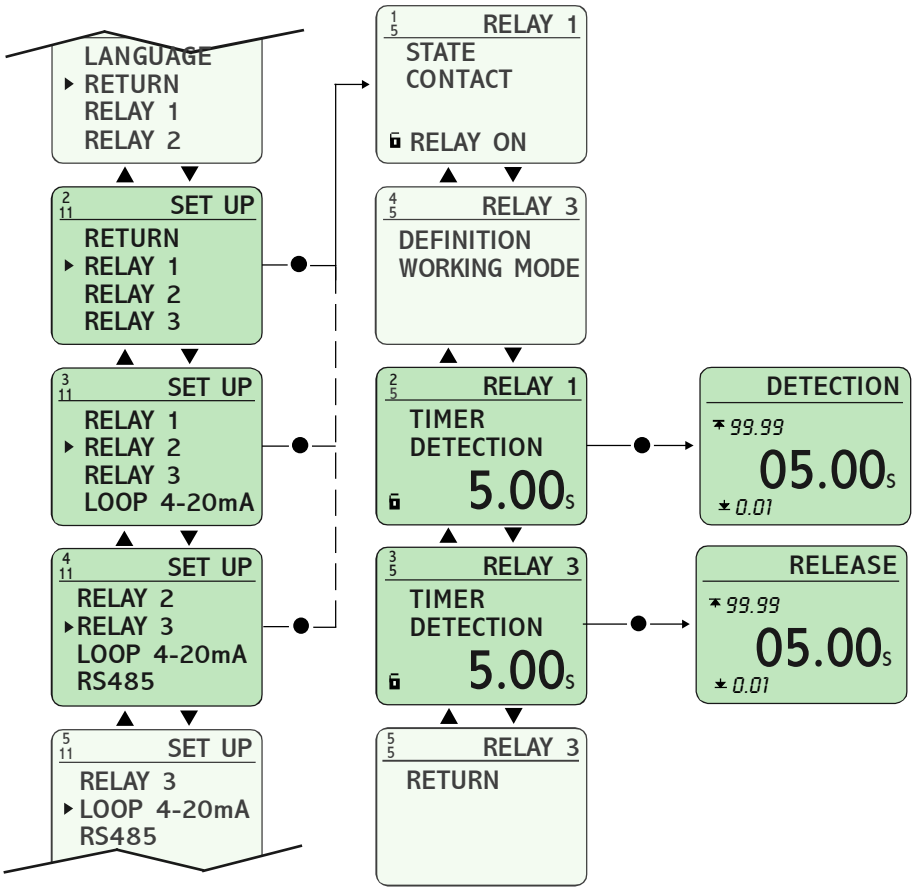
Complementary Functions (3/4) — DELAY ON INTERVAL



Previous conditions	STATE CONTACT = **[** RELAY ON **]** WIND SPEED MAXIMUM = **[** NON OPERATIVE **]** WIND SPEED MINIMUM = **[** NON OPERATIVE **]** MODE DETECTION = **[** DELAYED **]** MODE RELEASE = **[** CANCELED **]**

When the supply voltage is connected the relay operates instantaneously and the time circuits starts up. Once the time has elapsed the relay releases. It can remain in this state for an undefined time.

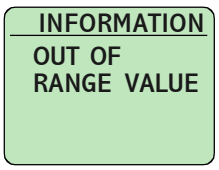
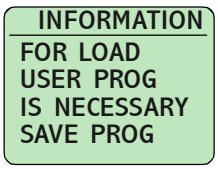
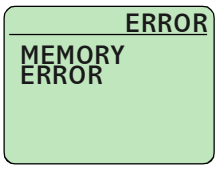
Complementary Functions (4/4) — RECYCLER TIMER



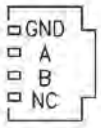
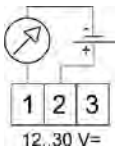
Previous conditions	Same as previous pages, except: MODE DETECTION = **[** DELAYED **]** MODE RELEASE = **[** DELAYED **]**
Cycle OFF-ON	STATE OF CONTACT = **[** RELAY OFF **]** When the supply voltage is connected the time adjusted in TIMER DETECTION starts up. Once the time has elapsed the relay operates until the time adjusted in TIME RELEASE elapses. The cycle repeates non-stop itself.
Cycle ON-OFF	STATE OF CONTACT = **[** RELAY ON **]** When the supply voltage is connected the relay operates instantaneously and the time circuit adjusted in TIMER DETECTION starts up. Once the time has elapsed the relay releases and remains in this state until the time adjusted in TIME RELEASE elapses. The cycle repeates non-stop itself.

ERROR SCREENS AND INFORMATION

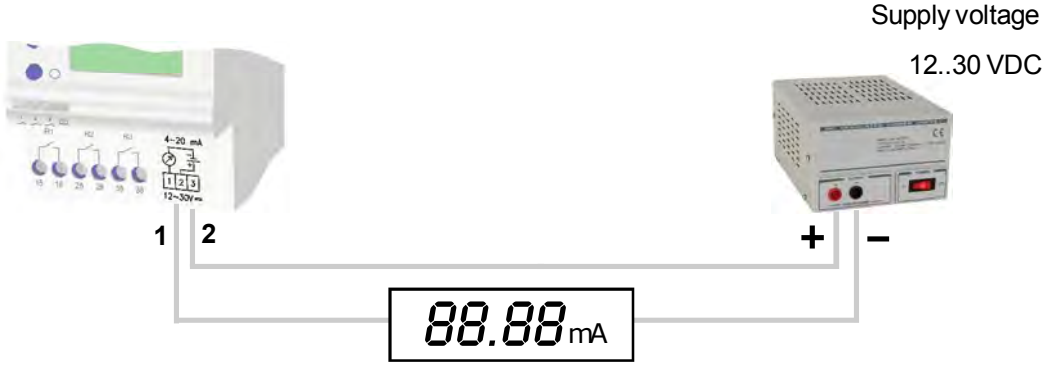
Under certain situations, the instrument displays informative screens, usually related to mistakes or inappropriate actions.

	Cause	Solution
	It has been introduced a value out of the allowed limits in the magnitude which is being adjusted.	Introduce whichever value between the allowed limits.
	It has attempted to load into memory the user program, but this was not loaded previously.	Save an user program.
	An error in the internal memory of the controller has been produced.	Contact with the manufacturer.

COMMUNICATION OUTPUTS (1/2)

Communication (According options)			
Standard Code 0	**RS232** Code 3	**RS485** Code 8	**4-20 mA** Code 4
			

LOOP CURRENT 4-20 mA



ACCESSORIES

CBPZ

Interface for remote programming from a PC.
It allows the connection between whichever digital relay not provided with bus and a PC.
Not required for devices provided with bus RS232, RS485 or with 4-20mA output.

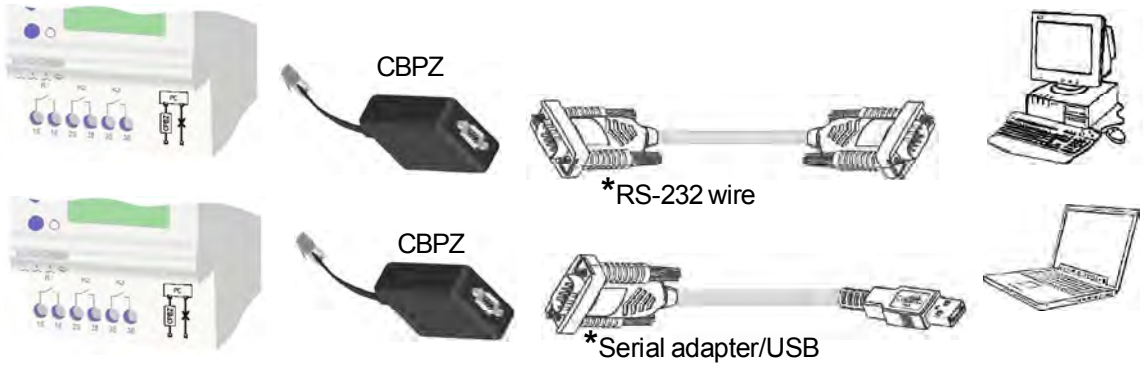
SBAZ

RS485 to RS232 signal converter for the remote programming or for the data capture and visualization from a PC.
It allows the connection of up to 31 digital control relays provided with RS485 communication bus, to get an unique codified RS232 output.

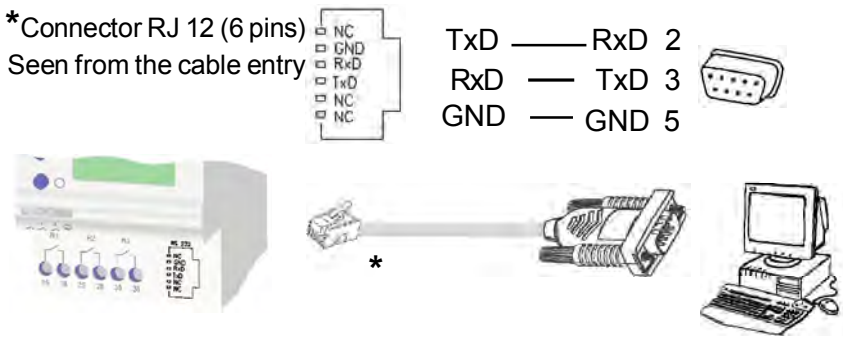
COMMUNICATION OUTPUTS (2/2)

REMOTE PROGRAMMING FROM PC

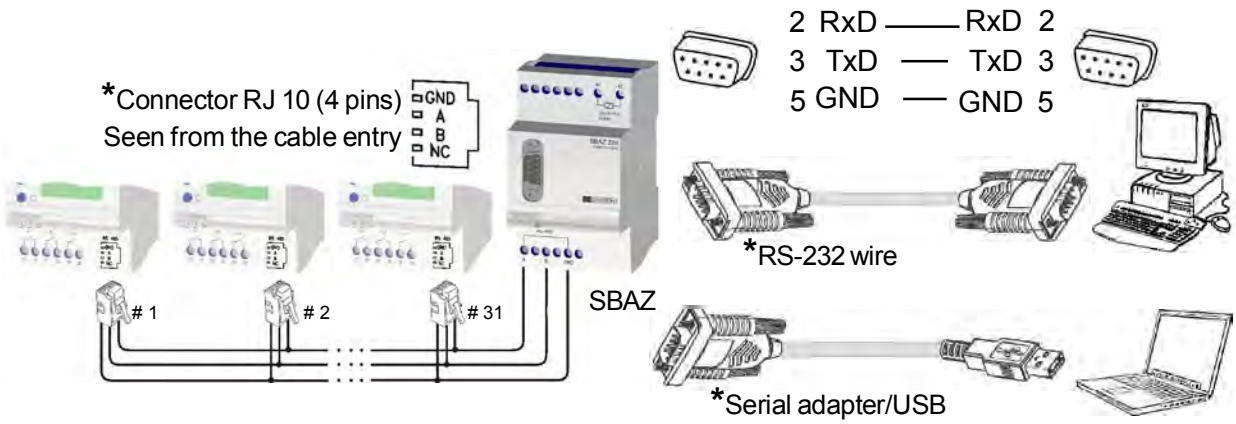
STANDARD MODE



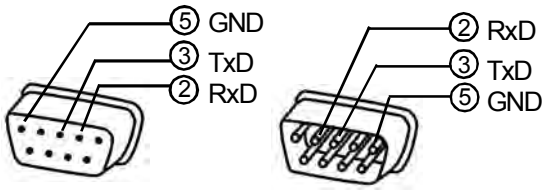
RS232 COMMUNICATION



RS485 COMMUNICATION



* Disibeint not supply cables or connectors. You can find these products in stores specializing in computer equipment.



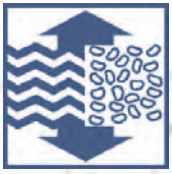
Your Notes

Z1
Y1
A1
A2
220-240 VCA
50/60Hz
DISIBEINT
SNI9 3A000 230 80N
LEVEL MODULAR SYSTEM
R1
K2
K3
15
18
25
28
35
38

Manufacturing program

Sensors

A wide variety of types of sensors allows an easy way to find out the efficient solution for the control of the level in a large number of products.



Level relays

Its combination with the level sensors is the suitable complement for the control of the level in wells, tanks and reservoirs.

Timers

From the common functions of timing and passing through the multifunction models, it is arrived to elements with specific functions

Control relays

This wide family who contributes to confidence and yield in complex installations where the security is the essential element.

Digital control relays

This family of controllers combines the own characteristics of the classic relays and improve them by adding new benefits.

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